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TEXT-BOOK  
OF  
PSYCHIATRY

A PSYCHOLOGICAL STUDY OF INSANITY

FOR PRACTITIONERS AND STUDENTS

BY

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AUTHORIZED TRANSLATION

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## PREFACE.

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The addition of the psychiatric clinic to those clinics at which the attendance of medical students is obligatory, and the addition of psychiatry to the list of subjects in respect to which physicians must be examined in conformity with the ordinance concerning examinations of May 28th, 1901, have prompted the publication of this text-book.

There is no lack in Germany of excellent works on psychiatry, but they have been deemed too comprehensive for the student attending clinics and for the young physician who is subject to examination.

The author's object is to bring cases demonstrated at the clinic into the general perspective of psychiatry, and to enable the student to fill up the gaps which the clinic must necessarily omit in the limited time given.

It is readily understood that in this volume clinical histories could not be included. It is especially true of psychic diseases, as well as of ailments included in the general study of medicine, that clinical histories do not give an actual picture of the disease to him who would learn to know it. Clinical instruction alone can teach this.

Extended notes from medical literature do not properly pertain to a text-book. It does not seem out of place, however, to refer to monographs, and especially to recently published works, in which have been collected the literature of striking special conditions, thus offering the reader an opportunity to instruct himself still further in any special question and without particular trouble.

An experience of thirty years in teaching psychiatry has convinced the writer of the practical usefulness of arrangement and classification, especially of the divisions of the psychoses.

Although the author's division of the psychoses may not be wholly free from objection, and, like all other groupings of the psychoses heretofore made, may lack a characteristic or unique principle of classification, it will, if followed, enable the physician to make a diagnosis in the great majority of cases, and thus to gain more extended understanding of the clinical significance of isolated cases will not be difficult.

BERLIN.

## TRANSLATOR'S PREFACE.

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No apology is necessary for the appearance in English of Professor Mendel's work on *Insanity*. For many years the author has been in the front rank of German men of science, and his investigations in nervous and mental phenomena have added vastly important data to these complex studies.

It is especially in *Psychiatry* that he has won enduring honors, and in consequence was selected to assist in the revision of those sections of the Prussian code of criminal procedure relating to the insane.

For many years visitors to his clinic and polyclinic have been impressed by his general courtesy and open hospitality to "Amerikaner," and in consequence many warm friendships have been engendered.

This work, the result of a lifetime of observation, bears the stamp of thoroughness and scientific acumen and may well be called "*A Psychological Study of Insanity*." Some license has naturally been taken in the translation, but it has been with the thought uppermost of rendering faithfully Professor Mendel's lucidity of style, while adapting it to the rules of English construction. The expression "twilight states" has been adopted as a literal translation of "*dämmerungs-zustände*," instead of the usual designation, "sub-consciousness states." "*Zwangs vorstellungen*" has been rendered as "imperative concepts" rather than by the word "obsessions." Otherwise the editor has tried to make as literal a translation as possible; has omitted the Prussian procedures relating to the insane, and substituted the New York State laws and commitment form. The chapters on Degeneracy and Heredity have been materially enlarged, and additions have been made throughout the work.

BUFFALO, N. Y., January, 1907.





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## INTRODUCTION.

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MENTAL diseases are diseases of the brain. Since mental activity has its seat in the cortex of the brain, it may be stated more specifically that mental diseases are diseases of the brain cortex.

Not all diseases of the brain cortex, however, engender mental disease; many of the focal diseases run their course without mental obliquity; a diffuse disturbance of the function of the cortex of the brain is necessary for the development of mental diseases; *these, accordingly, represent diffuse disturbances of the brain cortex.*

It is not known at present what pathological processes are present, which of them lead to a mental disturbance or to a delusion, or the nature of the physiological processes which lead to normal thought. What is offered as an explanation is in reality only an interpretation of the facts.

Since we still lack a physiology of the mental processes we cannot do without the old traditional psychological conceptions, if we wish to understand certain facts.

Sense-impression is the point of departure for each mental activity. It is *subjective* in so far as it is conditioned by the state of its own body; *objective*, in so far as it gives us a report of the relations of the outer world.

Sense-impressions have a determined localization in the brain cortex; the sense of vision has its center in the cortex of the occipital lobe in the neighborhood of the fissura calcarina, the sense of hearing in the superior gyrus of the lobus temporalis, the sense of smell and taste in the lobus falciformis, the muscle-sense probably in the central convolutions and in the lobus parietalis superior. We assume that each sense-impression, if it is of a certain degree of strength, produces a molecular change in the nerve cells affected, which gives the possibility of a reproduction, that is, a reawakening, by an internal process.

This capability of reproduction is called the *memory of the senses*. Corresponding to the localization just now discussed,

each sense has its own memory. The sense-perception is developed from the sense-impression, which already represents a most complicated process in the brain cortex.

I am sensible of the light which proceeds from a star. In order to *perceive* a star, that is, in order to recognize that light as proceeding from a star, the fact is connected with that perception of light that I, in order to feel the light, must turn my eye upwards, must bend my head backwards, because the body from which the light proceeds is small, because it is at an endless distance.

For the establishment of these last facts, conclusions serve which were drawn from the muscular feelings which come from the various states of contraction of the muscles of the eye, of the neck, of the pupils. Each component which leads to the *perception* of the star is, according to this, a complicated perception which has its point of departure in other regions of the brain cortex than that in which the sensibility to light has its seat.

The anatomical possibility of the connection of these different regions rests in the great development of the system of association fibers. Finally, for the perception of the star as a star, the comparison and identification of this latter with a preceding circumstance is necessary, whose result is designated as the perception of a star.

We designate as *an idea* the reproduction of previous sense-perceptions. I picture to myself a landscape which I have seen. The mental process which brings about the connection of the ideas is called *thinking*.

The association of the ideas follows determined laws, of which Aristotle distinguished four: that of similarity, that of contrast, that of co-existence, and that of succession, by which not only the nearness of space, but also of time, comes into consideration.

Of the numerous laws of association brought forward later, only Hume's law of cause and effect (better, motive and consequence) appears to be of any practical importance.<sup>1</sup>

The greatest role is undoubtedly played by the connection of

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<sup>1</sup> Although these laws of association are very imperfect, hitherto we have not been able to replace them by anything better.

synchronous, or better, since there must always be a certain interval of time between two sense-perceptions, by the connection of ideas immediately following one another (succession).

If the same paths are often used in the same way, they become "worn," "familiar;" a "chain of associations," or a "series of associations," is formed as soon as the first point of departure is fixed, and from this results the ease and apparent immediateness of the perception and the idea. By the separation of the important from the regularly appearing content of a determined series of connected ideas from the unimportant, the accidental and the intermittent, arises *conception*; from the synthesis of the conceptions comes the *judgment*; and, finally, from the judgments, the *conclusion*, which is the final result of the different ideas which have met and struggled for supremacy in the path of the associations.

Even the products of thought which are gained in this manner have the power of *reproduction*, so that it is not necessary for us in each single instance to wander anew through all the paths. The word by which we designate the determined conception, judgment, or conclusion, makes such a reproduction essentially easier.

There is a second peculiarity, besides the capability of reproduction, which resides in the sense-impressions, sense-perceptions, and thoughts accompanied by inward *feelings*. They may be in reference to their quality, feelings of *pleasure*, or feelings of *displeasure*. There is often an interference or zero point, at which neither the one nor the other feeling clearly appears.

*Sense-feelings* are those connected with sense-impressions or sense-perceptions, subjective or objective, and their reproductions; *feelings of the judgment* are those which accompany the activity of thinking and the judgments arising therefrom.

To the last belong:

1. The *ethical* feelings (good and bad). We distinguish egoistic and altruistic feelings: While the former are congenital and show the feeling of pleasure in furthering one's own interests, and the feeling of displeasure when obstacles arise, the latter are the product of education and reach their highest point

in interest for fellow-man, which is placed equal to one's own, and in some circumstances even higher. To these altruistic feelings belong the sentiments of friendship, of sympathy, of pity (social feelings).

2. The *religious* feelings: Piety and impiety as a contrast.

3. The *esthetic* feelings: "Beautiful" and "ugly," "sublime" and "depraved."

4. The *logical* or *intellectual* feelings: Feelings of pleasure if the mental labor is perfected quickly and without hindrance; feeling of displeasure on opposition, doubt, or delay.

*Sense-perception, thought, memory, and feelings are the foundations of intellectual activity, the primary functions of the organ of the psyche.*

The sum of all the sense-perceptions momentarily present, of ideas and their products, as well as of what has been previously present and is reproducible, is the *consciousness*; the sum of the feelings, connected with the content of the consciousness, we designate as *mind*.

If a determined perception or a determined idea of special power is dominant in the consciousness momentarily, it arouses those associated with itself and presses back those foreign to it; thus, we speak of *attention* in a certain direction; in a similar manner the *frame of the mind* shows a momentary situation of the mind.

By *emotion* we understand the sudden change of the frame of the mind induced by inner or outer influences connected with violent shock to the consciousness, so that there results a disturbance in the efflux of the ideas, a temporary disturbance of the inner equilibrium, and of circumspection, and which is often followed by abnormal actions.

The keystone of the arch of our psychic activity is the development of *self-consciousness*. The consciousness of one's own personality, in association with and in contrast to the outer world and the perception of the continuity of this relation, constitutes the *Ego*.

As the conception is developed from the ideas, so the *conception* of the *Ego* is developed from the reproduced contents of the consciousness, which are always arranging themselves in new

forms while the important, regularly appearing, presses back the unimportant, accidental, and changeable.

Besides sense-perceptions, ideas, and feelings, and the capability of reproduction of these phenomena, there is no such primary function of the psyche which one might designate as *will*. The so-called arbitrary actions, which have been brought forth from the will, proceed from the end of a series of ideas which are partially directed to the completion of an action (associating), partly to its omission (contrasting).

The developing process of association between the inner or the outer excitation which gives the motive to the completion of an action and the movement which unfolds it, is called *reflection*. In the struggle of ideas, the greater or less power of the motives pressing for the action, or demanding its omission, finally decides in which are present, on one side, habits, well-worn paths the conceptions of the *Ego*, and, on the other, are suddenly pressing sense-perceptions and thought-ideas, with which the accompanying feelings are of peculiar significance.

*The will is "an idea born from an idea, and generating ideas of special accentuation."*

A part of the apparently arbitrary actions appear, on more exact analysis, to be *reflex*, called forth by sense-perceptions, passing over upon the motor apparatus by well-worn ways.

A series of other actions are brought about by instincts. These are strong sense-feelings pressing for satisfaction; they reach the re-establishment of an inner equilibrium by their satisfaction.

Finally, the actions in the emotions are reflex, that is, released by the shattering of the content of consciousness without the intervention of thought-ideas. The reflex action of the emotions on the motor paths is shown in the course of the same. One after another, the paths of the oculomotor (starting eyes, change of the position of the eyes), of the trigeminus (gnashing of the teeth), of the facialis (spasmodic expression of the face), of the vagus (palpitation of the heart), etc., are attacked.

According to this, the discussion of the pathological disturbances of mental activity would have to treat of:—

- I. Disturbances of the sensation and the sense-perception,
- II. Disturbances of thought,

III. Disturbances of the power of reproduction,

IV. Disturbances of the feelings accompanying these psychic phenomena.

From these disturbances must result spontaneously the disturbances of the consciousness, of the self-consciousness, and of action.

# PART I.

## GENERAL PSYCHIATRY.

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### A. General Symptomatology.

#### I. THE DISTURBANCES OF SENSATION AND SENSE PERCEPTION.

These may take their point of departure in diseases of the superficial terminal apparatus, of the sensory conductors, or of the cortical centers. The disturbance of these functions may consist of hyperesthesia, paresthesia, or anesthesia (hypesthesia).

##### 1. Hyperesthesias and Paresthesias Originating in Disease of the Superficial Terminal Apparatus and of the Sensory Conductors.

The elaborate discussion of these phenomena is the task of the special pathology of the nervous system. In this place only those facts will be made prominent which may be of clinical and sometimes of therapeutical significance in mental diseases. Here belong the hyperesthetic condition of the optic nerve which is called forth by opacities of the vitreous body, choroiditis, neuritis optica, and which show themselves (*entoptic* phenomena) as light phenomena (stars, flashes, photopsias), and as the seeing of fiery and colored mists.

In the sense of hearing *entotic* phenomena appear as roaring, hissing, whistling, and noises which may arise from furunculosis, or the accumulation of cerumen in the external auditory canal, by auto-perception of the venous murmur in the chlorotic, by the dilatation of the *bulbus venæ jugularis*, by atheroma of the arterial walls (especially frequent in the beginning of dementia senilis).

Putrid and offensive sensations of *taste* (psychoses with refusal to take food) may be called forth by fur on the tongue and its decomposition, especially with faulty reception of nourishment. Finally, neuritis engenders *paresthetic sensations of the skin*, tingling, formication (tabes, alcoholism, diabetes).

All these disturbances may be the point of departure, in the mentally diseased, for the development of hallucinations. They often give, according to their localization and nature, a special significance to the false ideas.

## 2. Hyperesthesias of the Sensory Centers of the Cortex and Their Paths of Association.

We know from neuropathology the increased irritability of the cortical sense centers in hysteria. This increased irritability affects sight, hearing, smelling, taste, and the senses of touch and of motion are equally affected. Increased irritability, especially of sight and hearing, is often found in the melancholiac; every impression of light, every noise gives him pain. The heightened irritability of the emotions distinguishes the conditions of mania.

The so-called *after-sensations* are to be designated as a consequence of heightened irritability: an irritation, which was once formed from an external impression, remains for hours (Newton saw the sun, which he had fixed his eyes upon before, in full splendor in a dark chamber for a long time afterwards; one of my patients heard for hours the sound of bells before which he had fled and which for a long time had ceased to be audible). Such after-sensations are observed in certain intoxication psychoses (hashish), in hysteric psychoses, and in melancholia, in which latter they may especially increase the anxiety.

In the series of hyperesthetic conditions belongs, also, the facile impressibility of the association fibers connecting the sensory centers which condition the so-called *secondary sense-impressions*<sup>1</sup> (co-sensibility, double sensibility). With an auditory deception appears contemporaneously a color sensibility (audition colorée, Schallphotismen, or sound photism), in which, generally,

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<sup>1</sup> Köppe, Deutsche Medicinische Wochenschrift, 1899, No. 35.



clear, deep tones call forth dark colors. The perceptions of color are often connected with the sight of certain numbers and letters (pseudochromesthesia).

Impressions of smell and taste may likewise call forth certain colors (in drinking acid-liquids, a blue color, or in drinking vinegar, a red color) (photism of smell and taste, olfaction and gustation colorée).

Noises are not often perceived with sensations of light (light-phonism). Contrariwise, Köppe observed smell-phonism (the smell of resin on the whistling of a tune).

More often sight-perceptions are connected with obscure feelings of movement, as, for example, on looking down from a great height paresthesias appear in the legs.

Such secondary sense-impressions are observed in the healthy as well as in neurasthenics, in hysteric psychoses, in melancholiacs, and also in paranoic conditions. In the framing of these secondary sensations also belong those observations in which the patient, on seeing certain persons, has marked sensations at some point of the body, for example, in the gastric region or on the tongue.

Finally, the hyperesthesia of the sensory centers essentially calls forth the so-called hypochondric sensations.

It cannot be doubted that the internal organs, as well as the sensory apparatus and the extremities, have their central projection, that is, that each organ has its reflection in the brain. At the present time we do not know the localization of these centers. It is possible that they have a sub-cortical center, perhaps in one of the large ganglia. As long as the bodily organs are in their normal condition, we are not cognizant of them, we feel neither our heart nor our liver. A special irritation, a pathological condition of a certain organ, brings us, by the irritation which is conveyed centripetally to the center, to a consciousness of the trouble; we feel the diseased organ.

A hyperesthesia of the diseased center may awaken in it the most varied sensations by the law of eccentric sensibility, as compared with the normal nature of the diseased organ: Anomaly of the subjective sense-impression, *hypochondric sensations*.

In this description of the hyperesthesia of the sensory centers we treat only of the simple phenomena, adequate to the

specific physiological function of the nerve. But in hyperesthesias of the sensory centers, further central phenomena may be developed in the life of ideas, which lead to complicated sensory pictures. We designate these by the name of:

### 3. Hallucinations<sup>1</sup> or Sensory Deceptions.

In this is included in the pathological process not only the sensory impression, but also the complicated association process which we call sense-perception.

*Hallucinations are sense-perceptions without an exterior object present.*<sup>2</sup>

They appear in all the senses.

The hallucinations of sight may be of a simple elementary nature and form, as such, transitions from the irritation phenomena of optics to hallucinations: Seeing lightning, rainbow colors, pillars of fire, fiery wheels, and other such things. Or they are of a composite nature: Animal forms, rats, mice (zoöpsy), human shapes, the dead, angels, God, whole processions, masquerades, "phantasmagorias."

Sometimes the picture of hallucination shows the person himself (second sight), also as a "corpse" or "flying through the space of the universe" (oftener observed by epileptics, Goethe on his return from Sesenheim).

Generally the pictures have something shadowy, oftener they appear as "mirrorings" like the pictures of a magic lantern, consequently without depth; but are sometimes clear and shining.

Many pictures appear without motion, always in the same place and in the same manner (stable hallucinations); others pass by the observer, come up to him or move away from him, become larger or smaller (agitated hallucinations in maniacal states, in delirium tremens).

Many patients see everything of unusually large size (macropsia); others, everything very small (micropsia).

The movement of the images of hallucination and their changing magnitude are generally connected with hallucinations

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<sup>1</sup> Hallucinari comes from *alucus*, *ἀλολυζειν*, *ululari*, which is formed onomatopoeically from the hooting of owls. It is probable that this word was at first *alucinari*: to behave like night birds, to shriek and hoot.

<sup>2</sup> Mendel, *Klinische Wochenschrift*, 1890, page 578.

of the muscular feeling in the region of the interior and exterior muscles of the eye.

Quite often a dilated pupil in the patient corresponds with the perception of a hallucination at a distance, while a contracted pupil corresponds with such a one close by. Another connection of sight hallucinations with hallucinations in the feelings of the muscles (writing center) is that the patient writes (or sees written) his thoughts on the wall, "in the air" (photography of thought).

The hallucinations of audition are either of an elementary nature (tone *a* by the composer Schumann, cracking, shooting, rushing of water) or of a complicated nature: Hearing single words or sentences ("rascal," "Don Juan of the water-works," "you must marry"), speeches of one or more persons, men, women, children, "a whole mob"; sometimes different languages are heard, quite often rhymes or whole verses. The voices are often low at first, then plainly heard as if coming nearer. Generally the voice is in a whisper, but sometimes loud: "Trumpet tones," "they yell in my ear."

In many cases the patient answers the voice which he hears, carries on a conversation with it.

Sometimes the hallucinations of audition are first called forth by hallucinations of sight: The patient sees a shadow, this begins to speak.

With the hallucinations of audition belongs also the audibility of one's own thoughts.<sup>1</sup>

At first it is only a "catch-word" spoken to the patient, arising from the momentary idea, for example, with the thought of father, "father," or, with the thought of death, "death." The hearing of such words, generally softly spoken at first, causes great disquiet and unrest to the patient in regard to the unheard-of and horrible thing which happens him; gradually he elaborates the occurrence into his system of delusions, and then a condition is developed in which these catch-words are clothed in an allocution, as: "Now he thinks of his father," "Now he thinks of his death." This is an "echo of the thought;" they "take away his

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<sup>1</sup> Cramer, Die Hallucinationen im Muskelsinn bei Geisteskranken. Freiburg, 1889.

thoughts." Contemporaneously movements of the lips and of the tongue are sometimes perceived.

The phenomena in which the patient believes from the mien, the expressions, actions of his environment, from the reports of newspapers, that his innermost thoughts have become known ("truly you know it"), must be distinguished from this audibility of thought. Here it concerns an elaboration of perceptions in the sense of a system of delusion. Hallucinations of sense of touch or of the *cœnesthetic* sense about the head (sensation of becoming "electrified" or "magnetized") may support the patient in the conviction that people "strip him of his thoughts," "that his ideas are being taken from him."

In thoughts becoming audible one may imagine that retrograde agitation from the conception incites the hyperæsthetic acoustic picture belonging to it, and this appears as hallucination. This would be essentially the same process in the sense of hearing as that designated as vision in the visual sense: Sight hallucinations which are called forth by conceptions.

This audibility of thought often remains clear for some time in reading and writing. The spoken or written word, that is, the conception taken up with it or which is to be expressed, is called out. "I can write no more, since each word which is written, even before it is written, is called aloud by a man in the garden and communicated to all."

The hallucinations of taste and smell, which generally cannot be separated, or only with difficulty, from the illusions of these senses, have mostly a disagreeable content: The patient tastes "asafetida," "urine and excrement," "human flesh." He smells "corpses," "sulphur vapor," "carrion," "perspiration." Agreeable hallucinations seldom appear in these senses, but may appear especially in hysteric psychoses: "Heavenly sweetness," "attar of roses," "patchouli."

The hypochondric delusions are to be distinguished from these hallucinations; in those cases where the patient says that he feels badly after eating, that he has diarrhea, dizziness, resulting from it, and now concludes that poison must have been in the food; but he explains, on being asked, that he has not smelt or tasted it. Many of the apparent hallucinations of taste are hallucinations of the sense of touch of the tongue (feeling of

"pricking," "roughness," "needles," "glass-splinters," "hair" in the food).

The hallucinations of touch (cutaneous hallucinations) manifest themselves as having fur, formication, pricking, tickling, being sprinkled, the running around of rats, snakes on the body, electrifying, magnetizing, as pushing, striking, fettering, as the feeling of small bodies under the skin (see cocaine psychoses).

In the domain of the temperature sense hallucinations appear as perception of "passing a cold sponge over the body," "laying a cold hand on the forehead," "a branding-iron on the body," "pouring on boiling water," and the like.

The hallucinations in the muscle sense, so far as they affect the muscles of the eye, have already been spoken of under the hallucinations of vision. Hallucinations of the muscle sense of the organs of speech (motor speech center) may call forth an internal speech.

The patient hears some one speak within himself. "There is a thought speech," "there is a sixth sense," "a speech is brought to me." Corresponding to the system of hallucination, the internal speech is attributed to certain persons: "Meyer speaks in me," "the evil one speaks in me."

With the further development of such a pathological condition it may reach the doubling or even the tripling of the personality: Two inimical powers speak in the head, the third, who must suffer during the strife, is then the diseased person.

The occurrence of internal speech may be explained in the following manner: Even in normal conditions an agitation of the motor speech-images generally takes place during thinking, which often enough, especially when a lively conception occupies us, causes a slight movement of the lips and tongue.

In pathological conditions the phenomenon of agitation, which goes from the conception through the sound center to the motor center, may become retrograde. The motor word-images, when first aroused and led through the sound center, are heard by the Ego as words spoken within itself: it hears the speaking within itself.

Peculiar states of agitation are connected with these hallucinations in the centers of the sensations of the different organs;

thus the patient may get the impression that the speech came from the stomach, the abdomen, or the breast.

### *Kinesthetic Hallucinations.*

The tactile feelings of the skin, the centripetal agitation of the superficies of the joints, of the tendons and muscles, bring us tidings of the conditions of our limbs and their motion (kinesthetic feelings).

The pathological central stimulus of these impressions may call forth hallucinations. Patients feel wavering, floating in the air, believe themselves drawn on high or sunk in the depths.

From this the delusions receive their content, that the patients think that they are over the sea, are able to fly, are raised to heaven or sunken under the earth.

The degree of muscular tension is, as a rule, dependent upon the nature and intensity of the centripetal stimuli. But the last may be supplied by hallucinations in the kinesthetic feelings, and these hallucinations then determine the muscular tension. The katatonic tensions may generally be referred back to such hallucinations as may enter with or without delusions.

### *Hallucinations of the Cœnesthetic Sense.*

If the hypochondric impressions have their origin in a hyperesthesia of the cortical or subcortical centers, the hallucinations of the cœnesthetic sense carry out those impressions still further, in conformity with the *dominant delusion*; and the patient asserts: "My head is of glass," "my stomach has sunk down," "my heart has twisted from its place," "something has come out of my back," "there is stone before my anus." In severe cases, and generally in connection with other hallucinations, the delusion arises in the patient that his entire body is transformed, that he is metamorphosed into an animal, a wolf (lycanthropia), a dog (cynanthropia).

The hallucinations of the sexual organs, which may exist with or without the feeling of lust, call forth the statement in men that they have had erections, have emitted semen; in women, that unseen persons have had connection with them, that they have torn out the vagina and uterus, that their abdomen swells, that they feel life.

The elaboration of sexual hallucinations with the dominant system of mania brings forth the succubi and incubi (men or women who believe that they have sexual intercourse with the devil).

When a hallucination is called forth by an external object and is embodied in it, we designate it as an *illusion*. Therefore, *an illusion is the sensory perception of an external object changed by a hallucination*.

Illusions appear in all the senses; in the sense of sight, clouds, trees, carpets are transformed by hallucinations; they lead sometimes to the *symptom of non-recognition of persons*. The patient believes that he sees an acquaintance, or he sees acquaintances in a form changed by his hallucination. He sees in the expression of the faces of his acquaintances or strangers anxiety or repulsion (melancholia, paranoia): "Everything is so strange to me."

Even the contours of his own body sometimes take on another shape, *e.g.*, on looking into a mirror (hypochondric psychoses).

The external stimulus to the development of illusions in the sense of sight often lies in the eyes: The shadows which the blood-vessels of the internal eye cast upon the retina, and after-images found on the retina, scotomas (alcoholists), a broken crystalline lens may give the stimulus for arousing illusions, seeing flies, caterpillars.

Many patients have illusions of vision only with open eyes, others only when they are closed.

Illusions in the *sense of hearing* manifest themselves as words of abuse in the rustling of leaves, as caresses in the songs of birds, as hearing defamatory and injurious words in the innocent speeches of those around them, in the utterances of passing strangers.

Often the auditory illusions are excited by disease of the peripheral terminal organs (cerumen, otitis externa and interna). At first there arise only noises, ringing, buzzing, which may be perceived in the ear or head; then these are designated as coming from the outside, and finally voices are added to them.

Jolly was able to call forth artificially such illusions by electric excitation of the acoustic nerve. It has already been

stated that it is difficult to differentiate hallucinations and illusions of the gustatory and olfactory senses with certainty. It should only be mentioned here that single medicaments, like san-tonin, morphine, even in the form of subcutaneous injections, may call forth illusions.

In the *sense of touch*, neuritis, touching of the skin through the bed covers, folds in the covering or the shirt may call forth illusions which have the character of the above-mentioned hallucinations, may also show themselves as sensations as if animals, fleas, snakes, were moving over the skin.

In the same manner external injuries of the muscles or the kinesthetic apparatus may furnish the incitation for the illusions.

The illusions in the *cœnesthetic* sense are very frequent. The pathological change of an organ furnishes the point of departure for the deception. Sometimes the most careful examination will not disclose such a disease, and the autopsy first confirms the illusion. A patient asserted that at a certain point of the back something had been cut out of his body. At the autopsy the hallucination was shown to be an illusion: near this place there was a carcinoma of the pancreas.

As at the periphery, the incitation and point of departure for a hallucination may lie in the imaginative life.

The apparitions of *vision* are well recognized: An intense dominant conception calls forth a sensory image corresponding to itself (intense occupation with divine things: an angel appears, Luther's hallucination on the Wartburg).

There are healthy men who are able to call forth such sensory images (*hallucinationes voluntariæ*); they are observed oftener in psychoses, especially hysteric psychoses, in alcoholists, also in maniacal states. "I see what I wish."

Hallucinations and illusions may appear on one side.<sup>1</sup> This is especially observed in the senses of sight and hearing. Hallucinations, like illusions, may be unilateral and especially observed in the auditory and visual senses, almost always on the left side. Such unilateral hallucinations are observed in hysteric and epileptic psychoses ("red cog-wheel on the left eye" as aura of an epileptic attack, "the crow of a cock," "howling of beasts" on one

<sup>1</sup>Higier, Ueber unilaterale Hallucinationen. Wiener Klinik, 1894. Robertson, Journal of Mental Science, 1901, April.



side by epileptics, "Wacht am Rhein" on the left side in a hysterical psychosis) ; very often, also, in alcoholism.

In the sense of vision the unilateral hallucinations often combine with hemianopsia.

In all these cases, in which the normal sense-perception exists on the side not attacked, the most careful examination of the peripheral organs is necessary, since there are often illusions which take their point of departure from some pathological change in those organs.

In the sense of touch, unilateral hallucinations manifest themselves as a feeling of pulling on one ear, as the presence of a second person at the hallucinated side.

Bilateral hallucinations may have a *different content* on the two sides (hallucinations *dédoublées*).

The patient imagines a man before one eye, a woman before the other, hears with one ear "rascal," with the other "darling."

A voice on one side advises the patient to do a certain thing, a second on the other side warns him against it.

A "spirit," accompanying the patient, takes him by the right ear if he does anything bad, by the left if something good.

Often common duplex hallucinations are associated with these unilateral and bilateral ones; the first appear only intermittently, and sometimes they replace the duplex ones and later on are merged into the bilateral hallucinations.

Bilateral hallucinations which are designated as *antagonistic* or *contrasting* hallucinations are those which, while appearing in one or more senses, contradict each other by their content, as we have seen with the bilateral hallucinations with different content. They appear to the patient as a mutual negation.

*Secondary hallucinations* (reflex hallucinations) appear similar to the secondary sensations. With these the primary sense impression may be a real sense perception or a hallucination.

The patient hears his name called and feels a push in his stomach; after a certain olfactory perception a hallucination appears in the sexual organs.

In the great majority of cases the sense deceptions are accompanied by disagreeable feelings, as has already been mentioned in the deceptions of the taste and the smell, often, in their

beginning, by anxiety and terror from the unaccustomed, unheard-of, horrible phenomena (later the patient becomes accustomed to them). It is seldom that pleasurable feelings with vivid expectation accompany hallucinations (hysteric psychoses, paretics, paranoiacs).

*Physiological Pathology of the Hallucinations.*

The theory regarding the point of origin of the hallucinations is that it resides now in the peripheral nerve apparatus (Calmeil, Foville, Johannes Müller), now in the thalamus opticus (Luys, Ritti), the subcortical ganglia (Meynert), in the cortical sense centers (Ferrier, Tamburini), sometimes in the conception center (Esquirol: Hallucinations are images, ideas which are reproduced by the memory, associated with the power of imagination, personified through custom or habit).

Opposed to their peripheral origin (including that from the subcortical centers), is the fact that, although the peripheral apparatus may be entirely destroyed, as in the blind and deaf, the hallucinations will continue to develop or persist in these senses; that, further, the nerve in peripheral excitation answers only with a phenomenon corresponding to its specific function (the optic nerve, lightning; the acoustic, roaring, crashing), not with composite sense images; the origin from the imagination is contradicted by the appearance of unilateral hallucinations and with a purport which is foreign to the whole course of thought, as this is observed, especially in the beginning of single psychic diseases, and particularly in paranoia hallucinatoria.

On the other side is the fact that the mentally unbalanced firmly believe in the real truth of their hallucinations, that their thought and action are conformable to them, that the deceptions cannot be corrected, that the hallucinations generally take their cue from delusions or are adapted to them, not to be understood without the assumption of a contemporaneous pathological change of the psyche.

Opposed to the origin of hallucinations in the special cortical sense centers are those observations in which focal diseases of these centers did not lead to complicated hallucinations, but only to visual phenomena, or the perception of noises (Gowers, Bennett).

If the hallucination was only a focal affection of the corresponding sense center, the patient would be able to recognize the delusion through the control of the sense perceptions which had remained normal, which is really the case, the hallucinations being recognized as deceptions (hallucinations avec conscience). On the contrary, the actual participation of the sense centers in the hallucination is demonstrated by the change of the hallucinated image corresponding to the disturbed sense center. (Hallucinations of hearing in an atactic-aphasic with word-deafness as unintelligible phrases with the substitution of foreign words [Holland], hallucinations of sight in a patient with central limited defect of the field of vision; corresponding to the defect, the hallucinations showed only parts of the hallucinated objects, only the head or breast [Pick].)

In this condition of things the *psycho-sensorial* theory of hallucinations in those mentally diseased appears to be the only one which corresponds to the facts.<sup>1</sup> The hallucination has as a preliminary condition a pathological change of the psyche, on whose basis and with whose participation the pathological stimulus of the sense centers produces the hallucination. *From this, the hallucination represents a focal symptom in the diffuse disturbance of the brain cortex*, and is a local sign of the disease according to the situation of the center attacked.

That an excitation coming from the periphery may be of significance for the calling forth of hallucinations, has been proved in the discussion of illusions. This peripheral irritation may also be induced artificially.

The cessation of the peripheral irritation, closing of the eyes, stopping up the ears, removal of the pathological condition in the terminal apparatus of a special sense may diminish the intensity of the hallucination, or even cause its disappearance.

### *Occurrence of Hallucinations.*

The appearance of hallucinations premises that the individual has taken up sense images in the cortical center in which there are hallucinations. A person blind or deaf from birth

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<sup>1</sup> Storch, Versuch einer psycho-physiologische Darstellung der Sinneswahrnehmungen. Monatschrift für Psychiatrie, 1902.

cannot hallucinate in the visual or auditory senses, but he who has become blind or deaf may do this:

Hallucinations are observed:

1. In *persons of normal mind*, isolated or with long intervals only, in the sense of vision. (Goethe, Spinoza, Napoleon—the latter, according to the account of Thierry, at important junctures saw a star above him, which beckoned him forward). Further, see the interesting communications of Jolly on the hallucinations of sight of the botanist Nägeli, who had suffered from both eyes being burnt (*Zeitschrift für Psychiatrie*, Vol. 40, page 684).

Sometimes hallucinations of vision appear in the dark chamber after operations for cataract, in individuals who are otherwise healthy.

2. In *hysteria and epilepsy*. The patient is at first doubtful whether the hallucinated sense perception is true or not, yet he soon persuades himself that he has been deceived, and complains then of the “abnormal” appearances.

In epilepsy, hallucinations appear, especially in the sense of smell; sometimes they form the aura, sometimes an epileptic equivalent. In epileptics, one may sometimes call forth hallucinations of vision by compression of the carotids.

3. In *anemic states of the brain* after the loss of much blood, especially after parturition, in the puerperium, also with the shipwrecked.

Hallucinations appear preferably in the sense of vision, but also in the sense of hearing, as the sound of bells and the like.

On the basis of anemia of the brain there also arise the so-called *hypnagogic hallucinations*, which appear on going to sleep or shortly before awakening, sometimes in persons mentally normal.

4. In *febrile diseases*; children, especially, become easily hallucinated as soon as they become feverish.

5. In *intoxication and intoxication psychoses*.

6. In *focal diseases of the cortical sensoral sphere*, as, for instance, in diseases of the occipital lobe hallucinations of vision appear with the consciousness that they are deceptions.

7. In *the various mental diseases* (see the single forms). Hallucinations seldom appear in idiots; seldom (as hallucinations

of vision) with mania, sporadically in paranoia simplex, more frequently as hallucinations of hearing, but in other senses also with melancholia. In delirium hallucinatorium, as in paranoia hallucinatoria, the hallucinations form an essential constituent of the type of the disease, just as the hallucinations of the coenesthetic sense do in all hypochondric forms of the various psychoses.

In the twilight states (which see) hallucinations appear as in physiological dreams; but here they are really images of memory, which, as in a dream, are arbitrarily confused and connected without reference to space and time.

Sometimes hallucinations are found in only one sense, oftener in several, and one often finds on close examination that the hallucinations, which appear vividly only in one or two senses, in reality are in all or in almost all the senses.

8. After *recovery from mental disease*, hallucinations may long persist in single senses with the consciousness of deception (residual hallucinations—Wernicke). One of my melancholiacs heard the word “sin” exclaimed for more than a year following his recovery.

*Diagnosis.*—To determine that a hallucination exists, it is necessary to show that sensorial perception is present. It is necessary to eliminate from the patient's description of his apparent hallucinations all that may be considered as new interpretation (elaboration by his system of mania) or attempts at explanation, and ascertain what he is persuaded that he has perceived.

By this the hallucinations will present a more or less vivid sense image, which will be specially prominent by the insistence of the patient. The hallucination of one mentally diseased is characterized further by the persistency, by the force of conviction with which the patient presents the subjective perception as an objective fact. In the beginning of the psychosis, however, the patient is still somewhat doubtful; he attempts by the control of the other senses to convince himself whether some one has really spoken, or whether it is deception. Gradually he does not use this control. He is convinced that it is true, and completes the physical impossibility by the wonders of wireless telegraphy, of the telephone, of the phonograph, the Roentgen rays, magnet-

ism or "enchantment," "witchcraft." Against all objections he clings to his standpoint, and sometimes justifies it by the superiority of his senses. "Formerly I heard it as you do, but now my hearing is more acute," said one of my patients when I said that I did not hear the "voice" which he had just heard.

In many cases, however, the patients recognize their hallucinations as deceptions. They view them as in some measure objective, observe them and declare them to be the machinations of certain persons, attempts of their enemies who wish to injure them or even to make them "crazy" (alcoholists, paranoia hallucinatoria).

Hallucinations may be confounded with:

1. *Psychic hallucinations* (Baillarger), intellectual hallucinations.—It concerns here only ideas of greater vividness; there are "words without sound," "pictures without color:" "it seems as if I see," "it seems as if an inner voice said that to me." There is, however, really nothing seen or heard. In this category belong, also, the *false interpretation* of sense perceptions, objectively correct. The patient hears the actual rattling of the key in the bunch of keys, and says that he hears the clanking of chains, with which he is to be fettered.

2. *Paramnesia*.—The patient says this or that person has been present, he has experienced this or that. This may come from a hallucination which has been present, but is often, especially in states of mental weakness (paresis, dementia senilis), the product of a *paramnesia* (which see).

3. *Symbolization*.—As children in play give all sorts of personifications and meaning to their playthings, so also the mentally weak patient symbolizes the persons and things of his environment, without there being any disturbance of the sense perception.

In like manner paranoiacs, especially, transform their environments according to the dominant system of mania, even without hallucinations or illusions (delirium palinognosticum and metabolicum).

### *Dissimulation of Hallucinations.*

With the object of not being taken to an institution, or to be discharged from one, or to avoid being put under legal re-

straint, those mentally diseased sometimes conceal their hallucinations. One often succeeds in finding out the actual situation by observing the changing expression of the countenance, the movements of the head, by asking why they look at the table-cloth, at the door, why they have stopped up their ears with cotton, the keyhole with paper; the patient is confused at first and delays his answer, but gradually betrays himself. Sometimes the written memoranda of the patient, which have been found before, his behavior when he thinks himself alone and unobserved, establish the certainty of the diagnosis.

### *Significance of the Hallucinations for Action.*

The convincing power of the hallucinations explains their influence on the endeavors and the existing anomaly of thought, their transformation into actions without the essential interlacing of inhibiting ideas.

Sometimes, especially in cases of marked obscuring of the consciousness, the hallucinated are so occupied with their hallucinations, which have created a new sensory world for them, that they seem entirely oblivious to all other occurrences in their surroundings; in other cases their entire action and leisure, whether excited or at rest, is really determined by hallucinations; more often certain hallucinations give the action a determined direction, sometimes inciting to acts of violence.

God commands the patient to bring him an offering, and the patient kills a strange man; God commands him to cleanse the church of unworthy priests, and the patient sets fire to the cathedral (of York). Now and then, on the footsteps of the hallucination, follows a powerful reaction.

The patient hears an oath from his companion or from a stranger on the street, and he immediately strikes the man by whom he thinks it was uttered.

With the weakening of the intelligence and energy the power of the hallucinations over his actions weakens also.

The *prognosis* of the hallucinations depends upon the basic disease; those which are connected with a *systematized* mania have an unfavorable prognosis.

The *treatment* of hallucinations should first consider the form of the psychosis from which they have originated.

According to the above statements it is important to examine carefully the peripheral apparatus of the sensory organs which are hallucinated.

By treatment of the pathological changes which, perhaps, are there present, it is sometimes possible to exert a favorable influence to dispel or decrease the hallucinations.

According to the symptoms, one may use extr. stramonii 0.1, increasing to 0.25 gram once or twice daily, also arsenic in increasing doses.

Attempts to convince the patient of the unreality of the objective presence of the objects of his hallucinated sense perceptions are useless, and often excite the patient.

But, just as little, ought one to concede the real truth of his hallucinations. One should explain to the patient, as far as he is amenable to explanation, calmly and determinedly, that an excited fancy may show to him many things which do not really exist.

#### 4. Hypesthesia and Anesthesia of the Sense Perception.

The pathological diminution in the activity of the sense perception may show itself as a condition of *delayed conduction*.

This may be present in the entire sensory apparatus, or appear only in single senses.

This accompanies the organic diseases of the brain (paresis, dementia senilis), is often present in the secondary weak states of dementia, but appears also in functional psychoses, especially in melancholia. It lasts a certain time before the impression on the sight or hearing leads to identification.

Hypesthesia or anesthesia in the *sense of vision* shows itself in the complaints of the patient that all is dark and gloomy, that he cannot see men or houses distinctly, that they seem strange; the highest degree of anesthesia forms soul-blindness, in which it is impossible to identify the things seen with former similar sight impressions, that is, to recognize them again.

In the *sense of hearing* the corresponding phenomena manifest themselves to the degree of soul-deafness. In the *sense of smell* or *taste* centrally conditioned anosmia or ageusia appears,



which, in dementia, paresis, and similar states, makes possible occupation with the most disgusting things, and even the eating of them.

In the *sense of touch* anesthesia manifests itself as a loss of the sensation of being touched, of the sense of temperature (insensibility of the demented, raving, and paretics to heat and cold).

In the *kinesthetic feelings* the anesthesia appears especially as a loss of the feeling of fatigue (in raving and paralytic mania).

With the *loss of the ænesthetic sense* is connected the idea that single limbs have died, that the whole body is dead.

Even though a lasting, often progressive, hypesthesia and anesthesia of the sensory centers accompany the various forms of organically conditioned dementia, they may also appear only transiently, especially with the hysteric and epileptic psychoses, with melancholia, here often changing or contemporary with states of hyperesthesia in the same or other sense centers (*anesthesia dolorosa*), often in all states of clouding of the consciousness.

Since a certain degree of irritation of the sense centers is necessary to assure the possibility of reproduction, it is self-explanatory that in all conditions where there is a hypesthesia or anesthesia of the sense centers, the irritations of the senses which have been present during this condition cannot be reproduced.

The patients lose the *capability of impression*, that is, the power of impressing anything upon the memory; they cannot acquire new memory images and, consequently, new ideas. They cannot reproduce what has just happened (especially common in dementia senilis and in the later stages of paresis).

## II. THE DISTURBANCES OF THOUGHT.

The association of the ideas may be disturbed pathologically when:

1. Certain ideas press forward with especial power, or one or another law of association gains a supremacy over the others—imperative concepts.

2. An immoderate heightening of the speed of the efflux of the associations appears.

3. Ideas which, according to the laws of associations, should not be connected, are connected with one another (disturbance of the coördination of the associations, delusions).

4. The associations are perfected too slowly or too feebly.

### 1. Imperative Concepts.

These will be discussed in the chapters on special psychiatry as paranoia rudimentaria.

### 2. Pathological Heightening of the Rapidity of Associations.

Although hitherto experimental researches on the insane have given contradictory results (Maria Walitzkaja found in maniacal patients one-half to one-third the ordinary duration of the time of association—Kraepelin, on the contrary, retardation in the same psychic condition—while in normal states the time of association, roughly stated, that is, the time from speaking the inciting word to the pronouncing of the associated word, is one-half to one second and more), nevertheless clinical observation, especially the fact that such patients reproduce vividly memory-images, and can associate what was obscure for them in health, speaks for a heightened activity of the associations.

The accelerated efflux, which may increase to flight of ideas, is an essential symptom of mania (see this latter). In combination with heightened excitability and excitement of the psychomotor centers, they constitute that flight of ideas which is the essence of *maniacal raving*.

These conditions of the accelerated efflux of the ideas may appear intercurrently with maniacal excitements in the most diverse psychoses; they quite often form phases of a psychosis, as in circular psychosis, in the course of the katatonic symptom-complex, of paresis, of hysteric and epileptic psychoses.

Finally, many intoxication psychoses run under the type of maniacal excitation or maniacal raving (alcohol and other intoxications).

### 3. Delusions.<sup>1</sup>

*By delusions are designated judgments and conclusions which arise from a pathological association of ideas, involving the Ego, not recognized as pathological and not susceptible of correction by counterarguments.*

The content of delusions is different according to age and sex, environment and education, the position of the patients in society and their aspirations, and with the diversity of social, religious, and political relations.

However different the manner of expression of delusions may be, there are certain "primordial deliria" which may be distinguished, as Griesinger has pointed out.

#### (a) Expansive Delusion (Delirium Manicum).

The lower degrees of *egotism*, as they appear childishly in imbeciles and the demented, are developed to megalomania in maniacal conditions, and to *efflorescent megalomania* (delusions of grandeur), especially in paresis.

Megalomania may refer:

1. To the *social standing* of the patient. The patient thinks he is Minister, Field Marshal, Kaiser, "Kaiser of the pleasure-grounds," "Ruler of the whole world," "Jesus Christ," "God, actually or to be Over-God." He has 4000 omnibuses, and 20,000 carriages, all orders, millions, unnumbered milliards. Women boast about their toilets, their jewelry, are Crown Princesses, Princesses of the World, Empresses.

2. To the *intellectual qualities*. The patient understands and speaks all languages, has made the greatest discoveries (perpetuum mobile), builds a railroad to the moon, is the greatest scholar.

3. To the *bodily capabilities*. The patient has peculiar bodily endowments, raises 1000 centners with the little finger, has a penis 3 meters long, and begets a child every minute, women have borne 500 children, are again pregnant although they have long passed the climacteric.

In paresis the grandiose ideas often extend in all directions, and these patients show by their manner and appearances that

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<sup>1</sup> Friedmann, On Delusions. Wiesbaden, 1894.

they are weak-minded; while in mania they generally keep within certain limits. In the hysteric psychosis the megalomaniacal ideas often show themselves on the erotic side (men of high position have fallen in love with the patient), sometimes as religious mania (resurrections); in epileptic and alcoholic psychoses the religious idea is also often met ("God-pardoned," "prophet"); in paranoia megalomaniacal ideas develop in the most diverse directions. Here they appear at first logically formed by the meditation of the patient (see paranoia). Transient and changing megalomaniacal ideas also appear in delirium hallucinatorium, in a less degree in the maniacal phases of circular psychoses.

### (b) Depressive Delusions.

#### 1. *Melancholic Delusions.*

These arise on the basis of depressive moods and anxiety.

The patient thinks that he has not done his duty to God and man, he has sinned (*delusion of transgression*), he has perjured himself, he has betrayed his country, stolen, committed adultery, he must suffer horrible punishments not only in the hereafter, but also on earth. All the evil in the world proceeds from him, whoever associates with him will be damned, he draws everyone into destruction by his exhalations, even by his words (*delirium divergens*).

If these delusions appear especially exaggerated, as in efflorescent megalomania, but in an opposite direction ("I will serve 1000 years in the penitentiary," "I have ruined millions of men"), we speak of *micromania*.

Single actual occurrences in the life of the patient, even his whole past ("my whole life was a pool of transgression"), are retrospectively elaborated in the sense of melancholic mania: these patients never become tired of *self-accusation*.

As a logical consequence the *delusion of persecution* of the melancholiac develops.

At first the patient sees in the looks of his guardians, in their peculiar movements, in the expectoration or the turning away of the faces of persons passing in the street (attention or relation mania brought about by illusions or new interpretations), the signs that people have discovered his shameful deeds. Later

the patient is convinced that the police are tracing him, pursue him (in antiquity the Furies played this rôle, in the Middle Ages the witches), that they come to put him in prison, to fetter him.

The devil takes possession of the patients (demono-melancholia), they expect the day of judgment.

They fear punishment, and yet it appears just to them on account of all their misdeeds.

## 2. *Hypochondro-melancholic Delusions.*

Self-condemnation and the delusion of transgression are connected with the condition of one's own body and are generally connected with hallucinations and illusions of the coenesthetic sense.

Even here at first the attention-mania appears quite often; the people in the street see that the patient masturbates; they point at a node on his face which denotes syphilis. They say further that onanism, an actual or supposed syphilitic infection has ruined his whole body, destroyed his mind, "I must rot in my living body," "my testicles, my penis are withered."

In other cases the patients consider the change in their bodies as a just punishment of God for the sins which they have committed, as the consequence of poisons which were administered to them while eating, or otherwise, on account of their misdeeds.

Even here an anxious delirium divergens appears quite often; the patients carefully avoid touching others, will not sit on a chair or in the closet for fear of bringing others to ruin by contagion.

In the highest degree of these hypochondric delusions they generally progress, with hallucinations in the various senses, as far as delusions of *metamorphosis*; the patients believe that they are changed by divine punishment into dogs (cynanthropy), wolves (lycanthropy), a sort of delusion which, contrary to the experience of the Middle Ages, is now very rare.

The hypochondro-melancholic mania appears, besides being in melancholia hypochondriaca, where it is purest, also transiently in delirium hallucinatorium, further, in epileptic psychoses, more rarely in intoxication psychoses, especially in alcoholism, quite often in the depressive stage of paresis.

Both kinds of depressive delusions are connected with the

clinical types of melancholia generalis. They sometimes lead to the type of stupor (anxious stupor) with very vivid anxious hallucinations of vision and audition.

**(c) The Paranoic Delusions of Persecution.**

At first and in the mildest form these appear as attention (Neisser) or relation delusions. There is a special immediate relation to himself for what passes near him on the street, or for what may be in the newspapers, and to this is added a detractive, injurious significance (delirium convergens). The emotion of tense expectation (Linke) which generally accompanies this delusion, especially at the beginning of the disease, supports its expansion and confirmation. This expectation, that something will "happen" again, makes the patient restless, unstable, and distrustful.

Illusions and hallucinations often coöperate for making it more intense or to develop it.

Gradually, also, the past becomes pathologically transformed to correspond with the momentary perceptions.

*The paranoic delusion of persecution* is developed from the attention and relation delusion.

The patient, only distrustful and doubtful at first, becomes gradually convinced that he is the victim of persecutions and, in contrast to the delusion of persecution of the self-accusing melancholiac, the persecuted paranoiac considers himself the *innocent* victim of his persecutor. The sufferings, which are brought upon him by persecution, are not the punishment for misdeeds or sins committed; they have proceeded rather from false accusations, from envy and the spirit of revenge of his enemies, perhaps, also, because his foes wish to shelter themselves from punishment.

Sometimes there are enemies acting singly and individually, sometimes they act in groups, parties ("social democrats," "anarchists," "illuminated," "free-masons"), sometimes police officers, the minister, the sovereign.

Since the patient places a special value upon his person, and such extraordinary means are taken to wage war upon it, an over-estimation of himself is soon developed, which finally leads to megalomania. Some one injures him, confines him, will an-

nihilate him spiritually, will make him dead in law or destroy him altogether; in order to hinder him, take from him the position due to his birth in society, in the state or in the church; his gifts or his god-like inspiration.

The multiform delusions are here bound into a system.

There may also be a fusion of depressive delusions of self-accusation with paranoic delusions which express themselves in about the following manner:

"It is true that here and there I have not done right, but the cruelty and duration of the punishment which I have suffered by persecution stand in no proportion to that insignificant fault, which is already sufficiently punished."

Paranoic delusions of persecution appear, besides being present in paranoia, especially in imbecility, in hysteric and epileptic psychoses, in the varied intoxication psychoses, especially in alcoholism, in paresis, and in senile dementia.

They are quite often present transiently, especially in the mild form of attention delusion, in those predisposed through heredity, without coming to a developed psychosis, appearing especially at the time of puberty and in the climacteric.

On account of its practical interest we cite a peculiar form of paranoic delusion which is designated as the delusion of jealousy.<sup>1</sup> Either one of a married couple observes in the other that he or she exchanges glances with those in the house or on the street; the same person appears in the theater or on the railroad; the journals have significant cipher dispatches. Illusions, and hallucinations of taste, smell, or in the cœnesthetic sense (ideas of being poisoned), may tend to fortify or confirm these delusions.

A demeanor of repulsion shown to the patient by the husband or wife, denial of the marital privilege (especially by women towards alcoholic husbands, paralytics, or husbands who have become odious through mental disease) supports and strengthens the delusion of jealousy.

Sometimes the jealousy may not be without ground in fact, and yet we must assume a delusion of jealousy when the idea has gained so dominant an expansion that it rules exclusively the

<sup>1</sup> Villiers. *Le délire de la jalousie*. Brussels, 1899. Schüler, *Eifersuchtwahn bei Frauen*, *Jahrbuch für Psychiatrie*, 1901.

entire consciousness, so that all events are interpreted by that, and especially when violent actions toward the other are prompted by such feelings.

The delusion of jealousy appears in men, except in paranoiacs, especially in alcoholists and the various other intoxication psychoses (cocainism, diabetes), further, in imbecility, in paretics, especially in its initial stages, in senile dementia, sometimes in psychoses after apoplectic attacks; it is observed in women, besides being in the conditions mentioned, especially in hysteric and alcoholic psychoses, at the climacteric (where the realization of the disappearance of their charms acts as auxiliary), in lactation.

The paranoic delusion of persecution becomes quite often the point of departure for certain actions of the patients: the persecuted become the persecutors of their enemies (*persécutés persécuteurs*).

A particularly common example of this kind of patients is offered by the *querulants*. Believing themselves injured by police regulations or judicial sentence, they become untiring combatants in speech and writing for their inherent rights.

The paranoic idea of being injured by unjust civil or criminal legislation and the complaints arising on the basis of mania appear, besides being in paranoia, in imbeciles, sometimes in the incipient stages of senile dementia, further, in alcoholists, in morphinists, and also in epileptics. Every querulant, however, is not mentally diseased.

On the basis of depressive and paranoic delusions sometimes arise

#### (d) Delusions of Negation.

(*Délire des négations*, Cotard.)

These may refer to:

1. *One's own person*: "I am no longer a man, I have no heart, no longer sexual organs, because I cursed God (melancholic mania of transgression), because I have ruined myself by my dissipated life (melancholo-hypochondriac), because my enemies have poisoned me, have destroyed me by electricity" (paranoiac). "I shall never have stools again, for a stone is



lying before my anus." This last utterance is found in the most diverse conditions.

The hypochondriac designates the obstruction as a stone only figuratively, the melancholiac has the hallucination in the cœnesthetic sense, which deceives him so that he thinks there is a stone there for the punishment of his past sins (purely melancholic) or the consequence of his dissipated life (hypochondro-melancholic, the paranoiac considers the stone formation as the consequence of poisoning to which he has been exposed. The hypochondriac paretic designates the stone, which makes defecation at times impossible, as a "stone of marble" (connection with exaggerated ideas).

2. *The external world.* "There is no God, no sun." "There is no water, no money, no eating any longer." "There are no houses, no streets, everything is dead." With this, especially in connection with religious depressive delusions, the idea may arise that the patient considers himself as the only survivor, the "Wandering Jew."

Delusions of negation appear in melancholia and paranoia, also in paresis, seldom in delirium hallucinatorium and senile dementia.

The mania quite often inspires actions or a state of passivity expressed essentially in negativism, opposition (*folie d'opposition*, Guislain), refusing food and medicine.

Quite often the delusion of a *general changed existence* (delirium metabolicum)<sup>1</sup> forms a transition to the delusion of negation.

"Everything is imitated," "everything is false," "the date is falsified," "those around me are not sick, they are only determined to observe me," "I am transformed," "the name given me is not right."

Even here the melancholic or paranoic origin is to be distinguished; yet these delusions belong especially to the paranoic series.

Contradistinguished from these stands the delusion of *recognition* (delirium palinognosticum).

The patient sees in those around him, *e.g.* in an institution

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<sup>1</sup> From μεταβαλλω, to transform, turn around, change about.

which he has just entered, old acquaintances or persons whom he knows by description or pictures.

In mania this recognition through the aid of grandiose ideas takes place when, from defective concentration of the attention, a single mark, a wart, the fashion of the beard, or even illusions of the sense of vision, serves to designate persons as acquaintances. In paresis and senile dementia the disturbance in the reproduction is the essential fault, since the reproduced image, which serves for comparison with the momentary sense impression, is so weak that incorrect identifications easily take place.

The paranoic forms of these delusions are distinguished by this, that the identification (with or without sense-deceptions) occurs according to the dominant system of mania, whether it recognizes in others persecutors or their instigators, or, according to megalomania, eminent persons who wish to be near the patient, to serve him, or to carry out some kindred design.

In a higher degree, the patient, on the basis of the perceptions momentarily transformed, identifies the entire situation with one which he has already lived through in all its details, an identification which also may take place on the basis of a deception in the reproduction (deception of memory).

Such states appear especially in alcoholic and epileptic mental diseases.

The delusions described may be connected in different ways (*combined delusions*); a determined system may be developed from the connection (*systematized delusions*) in which the various delusions are arranged, and interpreted anew according to the true objective occurrence; further, the delusions may change according to their content, they may exist with or without illusions or hallucinations.

Often, especially in the depressive form, the delusions become monotonous, returning in the same form and with the same limited content.

Both in the transition of the disease to recovery and to dementia, the delusions fade away; they disappear without any peculiar excitation of the feelings, nor are they in a condition to exercise any influence on the actions.

In contrast to this, the delusions in clouding of the con-

sciousness, especially in the twilight states, with or without hallucinations, exert considerable influence on the actions (alcoholic, hysteric, epileptic twilight states), and, without disturbances in the emotions or anxiety, become considerably more intense, and by this favor the carrying out of the actions in accordance with the system of mania present (*e.g.* suicide).

After the mental functions have become normal in other things, sometimes there remain single, entirely limited, faded-out delusions (*residuary delusions*) in the same way as there are residuary hallucinations.

Almost the only time they appear is on direct questioning: "There was certainly something in it," "all was not imagination." With this, the otherwise normal consciousness is in the condition to hold back the internal unrest and also to suppress in the bud an action about to develop, perhaps, from the idea which has remained behind. One may regard that idea as a scar which disfigures but does not disturb the function of a limb.

It is necessary to distinguish from these residuary delusions the so-called *fixed idea*. We assumed that a mental disease might consist entirely in a *single fixed idea*, and this assumption had for a partial basis the doctrine of monomanias. Esquirol has already declared it: "If these persons were not mad, they would not be monomaniacs."

A man, who has only *one single* delusion and the remaining ideas normal, should be able to correct that, or, at least, to repress it the same as with the residuary delusions.

More exact examination and observation of suitable cases actually teach, however, that where only a single delusion seems to be present, a series of others may be demonstrated, and therefore the impression of "*the only one*" arises because it is especially prominent.

We do not know the nature of the physio-pathological process which calls forth a delusion, any more than we know the physiological process which produces an idea.

The *peculiar* color, the *content* of the delusion, may be determined otherwise than by the above-mentioned relations:—

(a) By *attempts to explain* the pathological tone present.

The feeling of progress, of fortune, which accompanies the acceleration of the efflux of ideas in maniacal states, becomes

expansive; the inhibition, which is connected with psychic pain and melancholic conditions, gives their content to depressive delusions; while, finally, the primary behavior of the external world, experienced as inhibiting and hostile to the individual, impresses its mark on the paranoic mania of persecution in paranoia.

(b) Occasionally the *last occurrences* before the attack of the disease, oftener yet those occurring at the beginning, may be decisive for the special content of the delusions.

(On the unveiling of the respective memorials in Berlin I saw a "Goethe," then a "Lessing," paranoiacs who were suddenly possessed by these ideas.)

(c) Finally, *hallucinations, dreams, certain sensations*, also, may act upon the special content of the delusions.

In respect to the last, Griesinger has already spoken of "co-ideas" in neuralgia, Schüle of "local signs" as the determined content of special localized neuralgias. We have already spoken of the considerable coöperation of illusions and hallucinations of the cœnesthetic sense in creating the content of the delusions.

*Diagnosis.*—In a number of cases the monstrosity of the content of the ideas confirms the diagnosis of delusion at once.

Where this is not the case the following should be observed in the diagnosis:—

*An idea may be true as to its content, but still be a delusion.*  
The patient reports that an earthquake occurred to-day in Italy. The journals confirm this the next day. In spite of this, this correct assertion originates in a delusion, for if asked whence he obtained his information, the patient says that he observed it by a shaking of his abdomen or that his "voice" communicated it.

*An idea may be false as to content, yet not be a delusion.*

Many healthy people believe in a corporeal devil; it is an error which has been taught them. The demonomaniac, who earlier, perhaps, did not have this belief, knows now that there is a devil in his abdomen, because the devil speaks in his brain.

As the above definition of delusion states, and these examples explain, the conclusion depends upon whether an idea is a delusion or not, really on the *genesis* of the idea. This shows

in the delusion that a momentary sense perception, a momentary idea, a momentarily dominant feeling is connected with another idea with which it should not be connected according to the laws of association; it treats, consequently, of a disturbance of the coördination of ideas. While this is the rule for the first appearance of a delusion, the following is often shown in its further course: An image of memory is connected with impressions of sense perceptions against the laws of association. The earlier idea, with which the momentary perception is connected, is generally of peculiar emphasis.

A female patient sees in a house opposite herself a man raise a roll of paper; she has been busily occupied with her testament before this; she immediately connects perception and the reproduction of that idea; they show her that her testament has been stolen.

If one is successful in ascertaining the first appearance of a delusion, it is often possible by this more easily to explain the further ramifications of the first. The path of abnormal coördination, once trod, become passable, finally worn; gradually other ideas are led by the same way also, finally all.

Since, of the ideas which become associated, one at least is of special importance for the Ego, *it explains the retreat of the Ego into the content of the delusions, which retreat is to be regarded as a characteristic feature.*

If now, even in the beginning of the disease, doubts often exist in the patient in regard to the actual basis of the pathological idea pressing upon him, the patient himself will often express such doubts, but gradually these become a constituent part of the spiritual Ego, and by this *incorrigible*. So-called reasonable grounds, the bringing in of objective facts which prove the real incorrectness of the ideas, judgments, and conclusions of the patient, are rejected by the constancy of the patient; his views are defended sometimes with skillful braggadocio or by the claim of supernatural power.

It is this incorrigibility, also, which sometimes stamps as delusions ideas whose actual basis is possible, or, at least, not contradicted.

Here it is not the quality, but the *quantity* of the idea which makes it a mania.

Some one believes that he has received an injury; it cannot be proved that this has not really been the case; that idea occupies the individual continually, forces all others back, shows itself everywhere, determines the patient's words and actions. In spite of all disadvantages, he is not persuaded, at least outwardly, to be more reserved. The mastery of the idea makes it a delusion.

Many querulant manias have such a development.

According to this, there are to be designated as signs of delusion:—

1. The genesis by association of ideas which ought not to be associated by the law of association.
2. The retreat of the Ego without sufficient reason.
3. Incurability.

The *diagnosis* must, when it has ascertained the presence of delusions, seek further to find out to which primordial system of delusions they belong, especially whether they are combined or systematized delusions.

The dissimulation of delusions is determined by the same fundamental principles used in cases of hallucination.

The behavior of the patient when he believes himself unobserved by physicians and attendants, pieces of writing which he has delivered or delivers, suggestive, opportune questions, will here make the diagnosis sure. Sometimes it is of importance to know the normal instincts and habits of the person investigated.

The *prognosis* and *treatment* of delusions depend upon the form of the mental disease in which these symptoms appear. Efflorescent megalomania is unfavorable prognostically, as well as systematized delusions. What is said of the treatment of hallucinations applies here; the attempt to reason the patient out of his delusions is useless, often injurious, since the patient becomes excited by such attempts and withdraws his confidence from the physician.

#### 4. Pathological Weakness in the Rapidity and Power of the Associations.

So far as this is based on a defective development of the organ of the mind, it will be discussed under idiotism.

The *diminution of the rapidity* of the associations expresses itself in the complaints of the melancholiacs, on their poverty of thought, in the slowness with which questions are answered, actions performed.

It is found in melancholia, here, perhaps, from an instinctive fear of thinking, because every spiritual activity causes pain (perhaps as a sufferer with a neuralgic affection tries to keep the affected member motionless), in the most diverse psychoses with states of mental weakness, in terminal dementia after primary functional mental disturbances, in states of intoxication, especially in alcoholism, also in myxedema, in epilepsy, in organic dementia, and sometimes is especially prominent with brain tumors and after apoplectic attacks.

The diminution of the *power of the associations* is shown:—

(a) In the lack of the greater or less emphasis with which these are completed and which is proper to them in normal conditions. The ideas appear equally, and even equally feebly, and, under these conditions, make the choice more difficult. From this arises the circumstantiality of narration of such patients who do not know how to separate the essential from the non-essential. The difficulty of the formation of new associations is shown sometimes in the repetition of one and the same monotonous word as an answer to the most diverse questions (*perseveration*).

(b) In the partial or complete loss of conceptions acquired previously, with the incapability of forming new ones.

At first these last appear, later the conceptions last acquired and those which are seldom used are lost; those remain longest which are regularly used in the worn paths. The fact that they remain is due to the power of reproduction which is still present. Here belong the outer conventionalities with officers, the technically correct prescription-writing of physicians, the formality of judicial procedure with jurists, and the like, in the later stages of mental disease.

Even the sense deceptions previously present and the delusions gradually fade away, are finally destroyed, or flicker up only occasionally.

These symptoms of diminished or finally exhausted mental activity form the essential sign of so-called weak-mindedness (the lower degree) and mental imbecility (the higher degree).

The last ends eventually in the complete destruction of the personality.

Mental weakness, combined with a certain pathological consciousness, often leads to the want of self-confidence, of energy, and of the capability of decision, to the so-called want of will-power (abulia) of many mental invalids.

Such states of incomplete or even of complete paralysis of the associations, *when they appear transiently*, are symptoms of the disturbance of consciousness which appears in the twilight and stupor states; further, they appear in dementia acuta and with apoplectiform or epileptiform seizures of the most various organic mental diseases.

### III. THE DISTURBANCES OF REPRODUCTION. MEMORY.

By means of the faculty of reproduction we are in position to place before us again sense perceptions, ideas with the judgments which proceed from them, conclusions, even the total content which the consciousness had in a given moment. We designate this capability as "the faculty of memory."

#### 1. Pathological Heightening of the Faculty of Memory. Hypermnnesia.

This is mostly observed in mania (consult) and generally consists in the easy calling forth of the images of memory according to the acceleration of the phenomena of association, and also in the increase of the power with which obscure images of an earlier time may be brought to light.

A similar condition appears in hysteric states and in the first stages of certain intoxications (alcohol, morphine).



## 2. Falsification of the Image of Memory. Paramnesia.

It is necessary for the reproduced image to correspond with the perception originally received to have a faithful memory, and that:—

1. This perception be accompanied in its genesis by a certain attention and a certain normal tone of feeling, and be reproducible by this means (the reproducibility is made easier by repetition and more difficult by long intervals).

2. If we treat of a comparison of a momentary impression with one had previously, the momentary perception occurs normally; and

3. That a normal power of association, which is necessary for the identification of the first idea, is present.

If any of these conditions are wanting, we may have *falsification of the image of memory*; this is formed and expressed in the following manner:—

1. The image to be reproduced is not sufficiently clear, because the above-mentioned conditions were not present at its reception.

In healthy people such disturbances of the memory appear because they were “distracted” when the first image was received, so that it was not taken clearly enough. In those demented, especially in paresis and senile dementia, it shows itself, *e.g.*, in the following manner: The physician visits the patient to-day; the lack of power of attention does not allow the latter to fix the image sufficiently, and the next day the patient sees in the physician, who again visits him, some one whom he had previously known.

According to the dementia, the images of memory of the restored patient at the time of his greatest disease, if they are present, are, also, frequently falsified, only exceptionally entirely true, by which the disturbance which the sense perception suffered by hallucinations and delusions may be yet observed.

2. The image momentarily perceived does not appear in the normal way.

In defective power of attention, in the rapid change of the ideas occupying the individual, the taking up of the image

is transient, and unessential constituents of it suffice, *e.g.*, for an identification in the memory of an experienced person.

3. The association, which is necessary for the comparison of a momentary perception with an earlier one, is disturbed pathologically, or it will associate the images of memory of certain facts with earlier ones, or ideas yet present which do not belong to the first in fact nor in time.

The commonest of the falsifications of memory which belong here are those in which the momentarily dominant delusions mix in the process of memory. The patient believes that he recognizes in those around him the highest dignitaries of the state, by signs in their countenances or stature corresponding with his great ideas, or denies the identity of persons previously known to him, according to his ideas of persecution. (See delirium palinognosticum and metabolicum.)

Many patients also change the perceptions and occurrences preserved in their memory, according to their system of mania (*retroactive construction of delusions*, Sommer).

The patient remembers that even in his youth his reputed father showed by his looks and gestures that he was not his father. "It was not without purpose that the word 'cochon' (hog) was given me to decline."

(Especially frequent in paranoiacs, but often, also, in melancholiacs.)

That play of disarranged associations is, further, to be designated as falsifications of the memory, in which momentary perceptions, their transformations by illusions, dreams, delusions, images of memory from books and journals are wildly confused, and incite the patient to the narration of astonishing events in his life, to the most noteworthy hunting stories, or to horrible histories of robbers. (Confabulations, hallucinations of the memory, Sully.)

With the contemporary loss of the capability of attention and the total lack of orientation in time and space, this kind of paramnesia forms a real psychic pathological symptom in the disease of Korsakoff (which see).

While these paramnesias appear mostly only in states of stupor or of considerable mental weakness, a discovery and reproduction of occurrences which have not taken place may

appear on a pathological basis where the power of deliberation is apparently perfectly retained. Wishes and hopes, romantic fancies, likes and dislikes, are generally melted together into occurrences whose report shall generally serve egoistic purposes. (*Pseudologia phantastica*, pathological liars and swindlers, Delbrück.)

Particularly, when the patient has told and retold his stories, he himself does not doubt their actual truth, so much the less, since a condition of mental weakness has generally made a critical judgment more difficult.

We designate as an *identifying form of the deception of the memory* (Sander), that occurrence in which the impression arises that one has already seen the momentary environment, that one has already seen or heard once before in the same manner what one sees or hears; in short, that one has already experienced once in the same manner the situation in which he finds himself for the moment.

This peculiar, surprising event has generally something terrifying in it; the person expects something unusual will happen; sometimes illusions conjure up new images. This mental abnormality, occasionally appearing in the healthy especially under circumstances of bodily or mental exhaustion, takes place oftener with epileptics (here, also, intermitting and periodically in connection with severe attacks), with alcoholists, sometimes, also, with paranoiacs.

### 3. Pathological Diminution and Destruction of the Power of Memory. Amnesia.

In the mildest forms the weakness of the faculty of memory is shown in the greater time consumed in "consideration," that is, the prolongation of the average time in which an image of the memory can be called into the consciousness.

With the general inhibition of mental activity, as it is especially shown in melancholic states, that disturbance is common, but it must be taken into consideration that the time of reproduction of the image of memory outwards is also prolonged. It is the same in all states of mental weakness, so far as there may not be a loss of the image of memory.

Amnesia needs only to meet a determined series of images of the memory localized in the cortex.

The images of memory of the acoustic and motor speech centers (sensory and motor aphasia), the word-images (alexia and agraphia), may be destroyed separately.

The discussion of these diseases belongs to the special pathology of brain diseases.

The amnesia may be *partial*, in so far as only single data of the faculty of memory are preserved, or the impression of a past situation can be retained in its general features, but not in its details (summary memory).

This kind of amnesia sometimes exists in epileptic, alcoholic raving states, also in the twilight and stupor conditions, like those in delirium hallucinatorium.

They are also oftener observed with wounds of the head, where the patients can only report vaguely the accident which befell them.

Senile amnesia, which is often partial, since it refers only to the near past, rests upon the loss of the power of attention at this age. Similar symptoms are observed in paresis and in other organic mental diseases.

*Amnesia*, in very different degrees, exists:—

1. For that which arose in the states of *obscurity* or *effacement of the consciousness* or *self-consciousness*, since in these states a reception of reproducible images does not take place at all, or only in a limited degree (delirium hallucinatorium, states of stupor or raving, epileptic, hystero-epileptic seizures).

2. In the *condition of effacement of the self-consciousness*. Here the amnesia may reach a degree where the patient does not know what his name is or where he lives. Here belongs, also, the amnesia of the conditions of *double* or *alternating consciousness*.

3. In states of *mental weakness*.

Here the images of memory which are oftenest exercised generally remain longest; the patients still recognize those nearest connected with them, but have forgotten all others; the things regularly learned in early youth still remain, things acquired later have vanished; finally, everything is lost, even the memory of their own personality.

The names of *retroactive*, or *retrograde amnesia* have been given to that loss of the images of memory which refers not only to the beginning and the time of the pathological condition, but which extends to a longer or shorter period of time previous to the disease.

Sometimes this defect concerns an exactly limited series of days, months, or even years, while what occurred before this period may be very well reproduced. With exception of this, these patients show no anomaly in their deliberations and are conscious of the pathological disturbance.

Others, on the contrary, fill up the time where this defect of memory occurs, with all sorts of events which never took place, they confabulate without their confabulation reaching the phantastic heights of *paramnesias*; it appears more like an excuse.

It is possible that gradually, especially after apoplectic attacks, certain images of memory may return; oftener they vanish permanently. In addition to their presence after apoplectic attacks, retrograde amnesia may be observed, after attempts at hanging, carbon dioxide intoxications, after injuries to the head, after epileptic, eclamptic, hysteric seizures, in which they sometimes appear periodically, and after the paralytic attacks in paresis.

#### IV. THE DISTURBANCES OF THE FEELINGS.

##### 1. Disturbances of the Sensory Feelings.

These may consist:—

- (a) In a pathological heightening;
- (b) In a pathological diminution; and
- (c) In a pathological inversion, that is, in the calling forth of feelings of pleasure where, under normal circumstances, disgust would be aroused.

##### (a) Pathological Heightening of the Sensory Feelings.

This is expressed in reference to the feeling of hunger as *greediness*, as it shows itself in idiocy, in the various secondary

states of mental weakness, in katatonic mental disturbances; it also manifests itself with especial frequency in paresis.

It is seldom that there is in the same patient contemporaneously a pathological heightening of the *feeling of thirst*, and this will always be a reason to examine the urine repeatedly (diabetes mellitus, diabetes insipidus).

On the contrary, an inclination to the immoderate use of alcoholic drinks is very often shown in the beginning of mania, further in the beginning of paresis.

Such a heightened appetite may also appear *periodically* and is then called *dipsomania* (Hufeland).<sup>1</sup>

Periodical alcoholism arises under the following conditions:—

1. Inheritors, especially those who descend from alcoholists, and imbeciles with small psychical powers of resistance begin to drink constantly at irregular intervals, especially when they assume new burdens or if they wish to forget obstacles (*pseudodipsomania*, Legrain).

2. Alcoholism begins with an attack of periodic mania; the drinking is conditioned by the maniacal state, a symptom of which is that the alcoholic phenomena partially cover the phenomena of the mania.

3. This may cover the maniacal phase of a circular psychosis in which the depressive phase is not very prominent; it may also take its course amid reproaches and self-accusations on account of the excesses committed.

4. The periodic drinking may be brought on by a periodic melancholia or hypochondria. The patient has tried, in an earlier attack, the favorable effect of alcohol in deadening his physical pain or his bodily infirmities, and he uses this remedy at the beginning of a new attack. In a similar way dipsomania may arise with periodically appearing neuroses.

5. On the basis of hysteria a heightened appetite for alcoholic beverages may appear periodically, contemporaneous with a total aversion to nourishment.

6. Dipsomania may be of epileptic nature, and even run periodically like an epileptic dream state.

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<sup>1</sup> Die Dipsomanie. Eine wissenschaftliche Studie von R. Gaupp. Jena, 1901.

The clinical type which the dipsomaniac offers is changing according to the cause which lies at the basis of the obsession for alcoholic beverages, and is also effaced by the symptoms of alcoholism. It appears to be a special disease as little known as the study of monomanias.

(Esquirol spoke of a monomania of intoxication.)

In many dipsomaniacs there is, in the interval between the attacks, a complete horror of alcoholic beverages; in other cases the dipsomaniac passes into chronic alcoholism after the excesses, often to the extent of delirium tremens.

The pathological heightening of the *sexual* feelings is shown in immoderate cohabitation (especially in the beginning of mania and paresis), in inveterate onanists (in them as in the various kinds of the psychoses of puberty; also in hysterical psychoses, especially at the climacteric, sometimes after apoplectic attacks, and oftener at the beginning of senile dementia).

In men it leads to *satyriasis*, in women to *nymphomania*, in both to *narcism* (observation of their own naked bodies with voluptuous ideas).

Sometimes men use for the heightening of their pleasure, especially for the carrying out of onanism, peculiar objects which women have used: pocket-handkerchiefs, aprons, locks of hair (fetichism, from *fetisso*, Portuguese, enchantment).

Onanism in early childhood (at the age of from 2 to 3 years) and the sexual excitement described as *paradoxia sexualis*, in children from 8 to 10 years (generally connected with imbecility, inclination to immoral actions) are to be mentioned as an abnormality of the sexual feelings. A heightening of the sexual feelings is sometimes shown contemporaneously with feelings of anxiety in severe hypochondria and hypochondric melancholia. The impulse to onanism here overcomes all good intentions; the onanism itself becomes the source of new culpability. In many cases onanism—without the heightening of sensory feelings—is used as a remedy or alleviation for the constant torments of hypochondriacs or hypochondric paranoiacs.

**(b) The Pathological Diminution or Destruction of the  
Sensory Feelings**

is exemplified in reference to the *feeling of hunger* as *anorexia*, even to the refusal of food (*sitophobia*, which see); even the thought of eating arouses disgust; in regard to the *feeling of thirst*, as *hydrophobia*, which without reference to *lyssa humana*, may appear in dipsomaniacs after the termination of the attack, in psychoses, in hypochondric psychoses with the fear of having been bitten by a mad dog, and in hysteric psychoses.

With the frequent and forcible contraction of the muscles, that sensation which we call muscular feeling becomes condensed to a *feeling of fatigue*. This feeling of fatigue may even be wanting in pathological states.

The absence of the feelings of hunger and thirst is a common phenomenon in the maniacal.

Diminution or entire want of *sexual feelings* is observed in inheritors, in idiotism, chronic alcoholism, organic psychoses (with tabetic symptoms), and in the advanced cases of dementia.

**(c) The Pathological Inversion in the Feelings of Pleasure  
Where Disgust Would Arise Under Normal Conditions.**

The transition from the physiological to the pathological evokes that desire in pregnant and hysteric persons for unnatural articles of food, which is designated by the name "*pica*."

In mental disease (in the state of raving, in dementia of high degree, in epileptics) appear the devourers of feces and drinkers of urine, designated as "*coprophagi*," in whom, contemporaneously perhaps, there is an anesthesia of the affected sensory centers. "*Anthropophagi*" are also observed (alcoholists and epileptics).

The perversities of the sexual feelings, which lead to criminal acts, have been extensively elaborated on account of their legal significance.

These may appear under the following forms:

1. As contrary sexual sensation with or without satisfac-



tion of sexual desire in the same sex: pederasty in men and Lesbian love in women (tribadism).

It appears in those mentally normal, in libertines, often in those heavily tainted hereditarily, in the beginning of psychoses, also, especially, in the beginning of paresis and in alcoholists. In sporadic cases pederasty is practiced because the passive pederast wishes to enjoy the sensation of the active.

2. *As exhibitionism*, exposing the membrum virile in the street with or without onanistic motions. (In women, exposure of the breasts). This may have various causes and arises

(a) To bring on a voluptuous feeling by it, to show the naked organ to women that they, as the exhibitionist assumes, may experience sensual excitement.

The strength of the first attempt at exhibitionism, as in other recurring abnormal actions, may be understood from the following forensic case: A teacher of the best reputation, when he was fifteen years old, was surprised by a servant girl while he was masturbating. She was very much amused over it. Since then he had pleasure in onanism only when a woman saw him, and he thought that she would be excited sensually by the spectacle. With this object he would expose his penis in the streets and wait till a woman approached.

(b) As the expression of hypochondric sensations of anxiety localized in the external genitals, which are only alleviated by exposing the sexual organs without reference to the consequences.

(c) In epileptoid seizures (relatively frequent), in which this action is incessantly repeated.

(d) In the beginning of paresis and senile dementia, in alcoholists and epileptics; with the loss of the intellectual feelings for decency and custom, culpability and shame.

(e) In imbeciles who have not attained the development of these feelings.

3. *As sexual feelings for children*. With libertines, inheritors, imbeciles and idiots, with the last sometimes "because mature women refuse them," but especially with epileptics, alcoholists, apopleptics, and in senile dementia.

4. *As heightening sexual feelings by wounding one's vic-*

tim, a woman or a boy (sadism, voluptuous murder in the highest degree), or by injuring one's own person (masochism).

5. As a desire for sexual satisfaction with animals (sodomy), with corpses (necrophilism), especially prevalent in epileptics, alcoholists, and imbeciles.

6. Finally, here belong the feelings of *sexual love and the carrying out of cohabitation with relatives* of the ascending and descending line (incest), in imbeciles, sometimes on the basis of paranoic delusions.

A man made pregnant his imbecile daughter of eighteen years in order to beget the second Saviour with the Virgin, for which he believed that he had been called through divine mission.

We comprehend the sum of the sensory feelings under the name of *ordinary feeling*.

This is in a state of normal equilibrium when the feelings are normal; it becomes a *pathological feeling* when any pathological phenomenon in the organs of the body gives a painful stimulus to the consciousness.

In the mentally diseased a pathological feeling may be present with special reference to an existing brain disease. So, e.g., in imbeciles, sometimes in intoxication psychoses, oftener in the beginning of the psychosis. The feeling of a determined change may rise to the *perception of disease*, thus in the beginning of the attacks in periodic or circular psychosis; quite often, also, in the beginning of paresis, with correct diagnosis on the part of the patient.

Generally, however, the feeling of disease is abnormally heightened or abnormally depressed, or entirely deficient.

We find the abnormal heightening in psychoses with hypochondric delusions, especially in hypochondric melancholia and paranoia.

The feeling of disease is depressed or is absent in moral melancholia. "I am perfectly well, but badly;" in mania, as in the maniacal stages of other psychoses, even the feelings of disease which correspond to actual disease (diseases of the heart, lungs) vanish.

Intercurrently, the feeling of disease, and even the per-

ception of disease, appear in mania and delirium hallucinatorium.

## **2. Disturbances of the Feelings of Judgment.**

### **(a) Their Pathological Heightening.**

The heightening of single feelings of the judgment is quite frequent in those mentally diseased, especially of the religious feelings with piety and impiety in contrast.

An immoderate pathological tendency to piety, to a "new awakening," to a participation in new religious sects, appears in imbeciles, hysterics, epileptics; an exaggeration of the feeling of atonement appears in melancholiacs, also in the melancholic stages of the various psychoses.

### **(b) Pathological Diminution.**

Indifference to what is good or bad, want of altruistic feelings, even exaltation of the egotists, lack of interest for the high and the low, decency and indecency are present in a greater or less degree in all states of mental weakness.

In idiotism these feelings do not generally reach development; in functional psychoses their permanent loss, with the diminution of the other morbid symptoms, points to a transition to secondary dementia. Sometimes the retrogradation of the intellectual feelings forms the first sign of an organic psychosis, so in paresis and dementia senilis. The patients are immodest in word and deed, are careless about their toilet, enter drawing-rooms without removing their hats, or bring public women into their families.

In the early stage of chronic alcoholism indifference to the fate of one's family, scanty respect and disgust for former friends, the upbraiding of near relatives, finally conflicts with the police, punishments, imprisonments are wont to announce the diminution or loss of those feelings.

While some of the epileptic psychoses likewise prove the loss of the feelings of judgment in the manner just described, the want of ethical feelings is present in the hysteric psychoses of girls and women, in having love affairs with inferiors and menials, in undressing before the physician. In the beginning

of their disease maniacs have very often a careless and indecent behavior, commit immoral offences, steal, lie and cheat.

Sometimes during the convalescence there remains a diminution of the intellectual feelings for some time, while the other symptoms of mental disease have vanished.

**(c) Pathological Inversion of the Feelings of Judgment.**

Perversity consists in the patient's finding peculiar enjoyment in those actions which cause others pain and mortification.

Such patients have had in their early youth a special joy in torturing animals, in killing them in a savage manner, in destroying and befouling the school-books of their playmates; they steal, set things on fire, and do not enjoy the deeds themselves as much as the thought of the trouble and pain they have brought on their victims.

They find, also, peculiar pleasure in deceiving others by *lying and cheating*.

The feeling of shame is wanting when the untruth is shown to the liar, and this deficiency favors the repetition of the offence.

In later life these individuals commit various crimes.

We have designated the defective development or loss of the feelings of judgment and the transformation of decency into indecency, a circumstance which often expresses itself in crime, or at least in criminal tendencies, as a special mental disease which may subsist by itself without the presence of other disturbances of the mental activity, and which is called *moral insanity* (Prichard).<sup>1</sup>

(As early as 1819 Grohmann spoke of immediate moral disorganization of the free will, of moral obtuseness, the brutality of the will, and moral imbecility.)

In opposition to this, however, I must hold that a man who shows these abnormalities *exclusively and alone* is a criminal, and that we only have a patient when other symptoms of mental disease can be shown.

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<sup>1</sup> Mendel in Eulenburg's Realencyclopedia, Näcke, Neurologisches Centralblatt, 1896. Binswanger, Volkmann's Sammlung, 1887. Cramer, Münchner Medicinische Wochenschrift, 1898, No. 46.

The group of symptoms of so-called moral insanity appears:—

1. Preferably in imbeciles, in whom the question is not of the loss or inversion of the feelings of judgment, but of their defective development, which *is connected with the symptoms of intellectual weakness*. It has to do with individuals who are almost always heavily tainted by heredity, who are distinguished, even before the time of going to school, by their brutality to animals, by their quarrels with their brothers and sisters, by their disobedience to their parents. They are inattentive and lazy in school, disturb the lessons by disorderly behavior, take away the belongings of their schoolmates, destroy their tablets and books, and lie. By dint of compulsion and trouble they pass through a few classes or wander from one school to another, from one boarding-house to another. Everywhere they get into trouble by their depravity, by their criminal tendencies, to which are added, often long before puberty, onanism, more often crimes against morality (*paradoxia sexualis*). This is repeated when they are dismissed from school and take up some calling. By a vagabond life, stealing, incendiarism, they come into conflict with the police and the criminal law, and are, unless an expert examination is made of their mental condition, sentenced to prison, but continue their former life after the expiration of the punishment. A good proportion of the habitual criminals is composed of such imbeciles.

Headaches, dizziness, epileptoid, and epileptic seizures very frequently accompany them from their youth up.

Generally a large number of the stigmata of degeneration, especially malformation of the cranium, deformities of the ears, harelip, malformation of the palate, deformities of the sexual organs, and others, are found.

2. In alcoholists, with other symptoms of chronic alcoholic intoxication, and in morphinism.

3. In epileptics, with the symptoms of epileptic psychosis.

4. In the beginning of paresis, likewise in senile dementia, connected in both cases with symptoms of mental weakness.

5. In hysteric psychoses, especially frequent with sexual anomalies.

6. In the beginning of mania, but especially in the maniacal stage of circular insanity, and very frequently in the attacks of periodic mania.

7. In paranoia. Here the immoral actions appear against all possible persons, often against those otherwise indifferent, as revenge on "the whole world" for all the chagrin which the patient asserts that he has suffered from his childhood; really in a greater or less degree for what he has suffered during his misconception of his pathological condition.

According to this, if there is not a mental disease which should be designated as "moral insanity," there is still less such a one which would consist solely in the inversion of a determined intellectual feeling after the analogy of a "fixed idea."

*Kleptomania, pyromania, the mania for murder* are either no monomanias, since the criminal tendencies appear as partial symptoms of a psychosis which may be of very different forms, or the so-called monomaniacs are to be designated as criminals.

The "aidoiomonomaniacs" have already been mentioned in the treating of perversions of the sexual feelings.

## V. THE DISTURBANCES IN THE CONDITION OF THE MIND.

The aggregate of the feelings which accompany the content of consciousness we designate as "mind." The lack of the development of its components, as well as each essential change in them from pathological causes, will bring forth a pathological disturbance of the mind.

The influence of the sensory feelings on the mind is shown, *e.g.*, by the pathological *cœnesthetic* sensations, as of the stomach and intestines and the depression of the mind connected with them.

Between the pessimist, ruled by feelings of dissatisfaction, of whom the "grumbler" is only an inferior kind, and the joyful optimist, there are as many varieties in disposition as between the melancholiac filled with anxiety, in a panphobic

delirium, and the paretic swimming in a sea of happiness. Hypomelancholic depression on one side, hypomaniacal and maniacal license form intermediate degrees.

The complete loss of all feelings of pleasure or displeasure, oftener with a certain remainder of sense feelings, is designated *obtuseness of the mind*, and conditions apathetic mental imbecility with loss of intelligence, while it is observed only with the weakening of the intelligence, especially in alcoholists and epileptics.

The momentary condition of the mind is called *frame of the mind*, or disposition.

So far as peculiarly prominent feelings are present, the frame of mind is only the expression of those feelings.

Attention is directed here only to the easy *changeability* of the frame of the mind in the mentally diseased, the quick and apparently wholly unmotivated or insufficiently motivated *change of the mind* (emotivity). "Shouting to Heaven, sorrowful as death," "laughter and weeping in one breath."

This appears as a prominent symptom of inheritors, is especially frequent in hysteric psychoses, often present with epileptics also, those who curse and pray alternately. Very often a certain emotivity remains as the remnant of mental diseases which have been cured.

The sudden change in the frame of the mind is shown in the affections, as anger and rage, as anxiety from the feelings of displeasure, as boisterousness, immoderate joy from the feelings of pleasure.

The expression of such affections, that is, their external signs, are the freer in those mentally diseased, as the inhibiting ideas are limited in power or pushed away; the affection becomes pathological. Such pathological affections are observed in imbeciles, epileptics, alcoholists, especially in inheritors. for the condition of the consciousness with these, see VI. The Disturbances of the Consciousness.

Of these emotions *anxiety* has a special interest, and its appearance as a cardinal symptom has caused some authors to speak of a peculiar form of psychosis, *psychosis of anxiety* (Wernicke).

Anxiety may be brought on by the new interpretation of

indifferent sense impressions in the individual so threatened, by fearful hallucinations, by tormenting ideas, and by abnormal sense feelings (fear of death, etc.); once called forth, they transform other perceptions, ideas, and feelings to conformity with themselves, and may reach, by an ever self-renewing pathological stimulus, a condition of anxiety, lasting for weeks and months, which may be connected with certain feelings of localized anxiety in the thoracic cavity (precordial anxiety), in the head, in the forehead, in the neck, or in the sexual organs.

Irradiation to the central motor apparatus leads in many cases to violent deeds (anxious raving, *e.g.* in melancholia, raptus melancholicus), or to complete motor inhibition (the patient is stiff with anxiety, "as if thunderstruck").

The diminution of *anxiety* may either signify the diminution of the symptoms calling it forth and the beginning of recovery from the disease, or signalize the entrance of a general weakness of the psychic functions which marks the transition of a curable psychosis into one incurable.

The diminution of the affection, with the other pathological symptoms unchanged, is generally to be regarded as an unfavorable symptom of prognosis.

Besides, in melancholia, in which the emotion of anxiety is a common phenomenon, it is observed in the depressive (melancholic and hypochondric) condition, types of the various psychoses (paresis, senile dementia, delirium hallucinatorium), it is developed in a characteristic manner from the hallucinations of alcoholists and quite often out of the hallucinations in epileptics.

So far we have spoken of general states of anxiety with undetermined or changing content, yet there is still an anxiety-emotion which is connected with the feelings of displeasure and even in the province of the ordinary feelings.

These emotions of anxiety are known under the name of *phobias* and are connected essentially with the fear of disease.

Relief from this anxiety conditions either certain external relations or certain abnormal sensations in one's own body. To the first belongs agoraphobia (fear of a vacant place), monophobia, hypsophobia (anxiety at great heights), nyctophobia (anxiety before and during the night), claustrophobia (fear



of remaining in a closed room). The patient fears to go over a great vacant place, because he once had an attack of dizziness in going over such a place, or was only afraid of an attack of dizziness, and had great anxiety from it because no house was near. He is afraid of the anxiety which he might experience again. He is afraid of being alone, because something might pass him, and then he would be without aid. He does not go over a bridge, does not stand by an open window, because he is afraid of becoming suddenly dizzy, or of being enveloped in darkness and in this condition might jump down.

The idea of a suddenly-appearing mental disease also forms the foundation for the "knife anxiety" and similar states, in which the patient is apprehensive at the sight of a knife, fearing that he may become so violently affected by mental disease as to kill himself or another with a knife.

In all such cases it is essential to determine what the psychic occurrence was when the anxiety *first* appeared. If this is not done, the logical connection between the object causing the anxiety and the subjective condition is often not recognized. In repetitions, especially in frequent repetitions in which the occurrence is completed through worn paths, the original basis no longer comes to the consciousness; an *unmotivated* compulsion seems to be present by which these phobias have received falsely the name of imperative concepts, while they are actually anxiety ideas, and, as shown, are mostly of a hypochondric nature.

In this class of phobias, belong, also, the cases in which the patient is everywhere afraid of the germs of disease, of poisons, of sharp objects whose *touch* even will cause wounds or disease (bacillus fear, arsenic, morphine fear, fear of splinters, of needles, of dirt [*mysophobia*]).

These states have been designated the *mania of doubt with fear of touch* (folie du doute avec délire du toucher).

As a consequence of the fear of being or having been injured by poison or dirt, in many cases the impulse to washing appears, to which the patient yields without resistance (washing mania).

This mania of doubt with fear of touch appears far oftener in women than in men, especially between the ages of 25 to 35

years and upwards; it is sometimes shown as the heightening of a hypochondria in those heavily tainted, and appears first with the breaking out of epidemics.

This condition runs its course with exacerbations and remissions, seldom makes a complete recovery, but in institutions leads only occasionally to mental weakness. Generally, the circle in which the patient moves and in which his interests are concentrated becomes even more contracted if the condition is not improved by suitable treatment. It may even lead to a complete loss of intercourse with men.

The treatment is essentially a psychic one, with the methodic use of cold water, bromide, arsenic, and quinine. The institution treatment, eventually a sanitarium, cannot be avoided if the patient's presence in the family is unbearable, and especially if it becomes injurious to the children.

This sort of mania of doubt with fear of touch is to be distinguished from that which arises from another wholly different psychic process, a determined disturbance in the associations (*cf.*, paranoia rudimentaria).

Further, anxiety may be resolved into certain abnormal sensibilities of the body (paresthesias and hyperesthesias). These sensibilities have very frequently their seat in the sexual organs (onanism, exhibitionism with anxiety).

A patient was in continual fear lest he should crush his penis in sitting, lest the hair on that part of the body should be torn, lest he might have headache from it.

In hystericals the anxiety is localized in the abdomen or bladder (torturing anxiety for fear of emitting flatulence, of urinating in company), while in others it may be localized in the teeth (*dental obsession*).

The states of anxiety described may accompany the most varied psychoses, especially those with delusions, but they may be present without the individual being suspected of having any mental disease.

In the last case, however, the sudden heightening of the anxiety may bring forth some disturbance in the continuity of the ideas; a disturbance of discretion may appear which will lead to abnormal actions (*emotional actions*).

## VI. THE DISTURBANCES OF CONSCIOUSNESS.

The content of consciousness in the mentally normal individual will be very different according to his mental endowment and education, his calling and position. It may be *limited* in those mentally diseased (idiotism, acquired dementia), or it may be *distorted* by hallucinations and delusions; both kinds of disturbances are very often connected in the same individual.

The accompanying disturbances have already been discussed. Here mention will only be made of the general content of consciousness as it appears externally. The equilibrium in perceptions, ideas, and feelings is shown exteriorly as *circumspection*. With this is also connected the capability of orienting one's self in regard to time and space.

The insane are often distinguished by the want of circumspection, sometimes because they are not oriented in regard to the place where they are, or the vicinity, or the time (disorientation). *Apparent constant* circumspection, however, does not exclude the presence of a mental disease. The want of intelligence may be concealed by the observance of outer forms. Sense deceptions and delusions may be suppressed or their external manifestation be kept in abeyance temporarily (especially in paranoia, also in alcoholism). Sometimes the appearance of circumspection in the insane is *intermittent*, transitory, especially in mania, delirium hallucinatorium, oftener in intoxication phycoses, less often in paresis. The patient declares suddenly that he knows now where he is, that he has said something very foolish, that he must have been sick.

The opposite of circumspection is *confusion*, a pathological condition of the consciousness in which the internal connection of the ideas becomes lax, the connection does not obey the normal laws of association. In it the conception of time and space is wanting. This state is expressed externally by confused speeches and aimless, disconcerted actions.

Confusion may arise:—

1. By numerous hallucinations—*hallucinatory confusion*—which enter with clouding of the consciousness and may appear as a symptom of the most varied psychoses.

Here belong the confusion of feverish patients and that of the intoxication psychoses, many cases of epileptic confusion, as in delirium hallucinatorium and transitorily in paranoia.

2. By everting the ideas, as in *maniacal confusion*, which is observed in the various types of maniacal excitement, but especially in *raving mania* (see this).

3. By the intrusion of too exuberant *emotions* into the consciousness. Even in those mentally normal, a very great joy, but especially an unmeasured anxiety, may lead to incoherent speeches. Transitorily anxious confusion shows itself in pathological relations, especially in melancholic states, sometimes without hallucinations. Particularly where the content of consciousness possesses no firm and resisting texture, confusion may be easily brought on by an emotion, as, *e.g.*, in inheritors, imbeciles, alcoholists.

4. By the disintegration of the consciousness in mental weakness, as the *demented form of confusion*, which is observed in terminal dementia, in paresis, in senile dementia, and other organic brain diseases.

The state of paraphasic confusedness, which presents the symptom of a focal brain disease, is to be distinguished from confusion. The patient is confused outwardly because he uses words whose meanings are contrary to those he intended using.

The fact that momentarily certain sense perceptions, certain ideas, certain feelings are dominant in the consciousness and are able to press back all others, is designated by the term, *attention*.

On this rests the possibility of studying a circumstance, of observing, and of undertaking difficult mental operations. The lack of attention (*aprosesia*) is a common symptom of imbecility and of all conditions of mental weakness. It appears especially in maniacal states, in which a continual digression appears as a characteristic symptom.

The attention may be *heightened* in the insane by the concentration of the consciousness upon certain pathological phenomena. Sometimes the hallucinated pursue their hallucinations with the greatest zeal; hypochondriacs pay particular attention to the phenomena in their own bodies, sometimes to a certain organ of the body; melancholiacs and paranoiacs, to

events of the external world brought into relationship with their own delusions (*hyperprosexia*). The possibility of a slight divergence of the attention shows its weakness, but does not necessarily signify a partial phenomenon of general mental weakness, and therefore is not an unfavorable symptom. The divergence may also come from the rapid change of concentration, to the slight coherence of the single images as in delirium hallucinatorium, or the eversion of the ideas in maniacal states, and does not imply an unfavorable prognosis.

The physiological, periodically recurrent diminution of the power of the mental processes of consciousness, which may reach to its complete loss, as in unconsciousness (sleep without dreams), is *sleep*, which presents very probably a physiological autointoxication of the brain.

Its diminution to complete sleeplessness (*agrypnia*) presents one of the most common initial symptoms of mental disease and quite often accompanies the curable mental disturbances throughout their whole course. The return of sleep is frequently the first symptom of convalescence. Defective sleep exists in most of the intoxication psychoses, while it is generally undisturbed in imbeciles and the demented.

An abnormally heightened desire for sleep, even to *lethargy*, sometimes takes place in convalescence from the psychoses, oftener in organic mental diseases, paresis, senile dementia, and in brain tumors.

*Periodical* falling asleep, which appears without reference to time and place (*narcolepsia*), is observed:—

1. In epileptics. The narcoleptic attack here signifies an epileptic equivalent.

2. In the hysterical, sometimes lasting for days or weeks.

With this there is generally trembling of the eyelids and a certain katatonic rigidity of the muscles.

3. In apoplectics, sometimes as a premonitory symptom of attacks; also in albuminuria and mellituria.

In the transition from sleep to waking, dream-ideas, taken from sleep, and in which there is not yet complete consciousness, may generate a state of sleep drunkenness (*somnolentia*) which may lead to perverted and even violent actions along the line of those dream-ideas.

In waking states *clouding of the consciousness* with preservation of the capabilities of motion and action may appear as *twilight states*, and with its limitation or loss it approaches a *stupor*.

### 1. Twilight States.<sup>1</sup>

The term "twilight states" is used in this work in lieu of "subconscious states."

The twilight state presents such a want of clearness of the consciousness, that the psychic phenomena which are being completed cannot be recognized as belonging to the Ego. The actions performed in this condition are completed under the threshold of self-consciousness by means of images of memory, or, if we take into consideration the well-worn paths, quite often according to the momentary sense perceptions. The ease of their elaboration and transition into actions is sufficiently explained by the lack of inhibitory ideas.

Such a patient in the twilight state may answer the common questions about his name, his age, or his dwelling. The physician visits him; on being asked, he shows his tongue; when questioned, he says that he has slept during the night, has a good appetite, etc.; but the patient has really answered in the twilight condition with the absence of his self-consciousness. In such a twilight condition the patient can make purchases, undertake journeys, count money correctly and pay it out. In such twilight states criminal actions are sometimes executed, desertion, theft, exhibitionism, violent injuries to others are carried out apparently with a full understanding of the object in view. With the frequent return of such states in the same individual, the actions performed in such a condition may appear with a certain uniformity and stereotyped character, as is observed especially in epileptic twilight states (*psychical epilepsy*).

The pupils in epileptic twilight states react slowly or not at all to light, are dilated or moderately dilated. The color of the face is generally pale. Sometimes in a hysterical twilight

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<sup>1</sup> Mörechen, Aus der psychiatrischen Klinik zu Marburg, 1901.

state the answers are so perverted and nonsensical that they give the impression of being simulated (Ganser).

If in these twilight states hallucinations appear, they are designated *dream states*.

The duration of these twilight or dream states may vary between the fraction of a minute to hours, days, weeks, or even months. In some cases amnesia exists during the whole period of the attack. Generally the recollection of the phenomena is only obscured, or there is a summary recollection with the loss of the details. Only exceptionally is there a complete power of recollection.

The patient of Bonhöfer spoke of his actions performed in a twilight state as done by a third person.

Twilight states appear especially often in epileptic and alcoholic psychoses. In the latter they are designated as *trances*. They are sometimes observed in hysteric, oftener in traumatic psychoses; furthermore, in certain conditions of intoxication, *e.g.*, in uremia, and, finally, in organic psychoses, especially frequent in connection with paralytic attacks or replacing them. Exceptionally, such a twilight state may appear transitorily in very severe bodily pain, as, *e.g.*, in migraine, in trigeminal neuralgia (*dysthymia neuralgica*, Schüle).

In those cases in which these twilight states appear generally at night with wandering about, as is especially observed in epilepsy and hystero-epilepsy, the term somnambulism (*somnambulare*, walking in sleep) has been used. Sometimes in these states the dominant ideas of the normal waking condition are forgotten, but return to the patient as soon as the attack recurs. From this, the patient has a double mental life, a condition which has been designated by the name of *double consciousness* (Jessen) or *alternating consciousness* (Solbrig).

## 2. Stupor.<sup>1</sup>

With the diminution of the lucidity of consciousness, which may be present in very different degrees, a motor disturbance enters, the patient is immovable, rigid. The stupor may have very different bases, and offers, conformably to them, many

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<sup>1</sup> Meyer, Archiv für Psychiatrie, vol. 32, p. 868, 1899.

differences in external appearance. We distinguish the following kinds of stupor:—

**(a) Anxious Stupor.**

The patient is rigid from anxiety. The expression of the countenance is full of pain and anguish, with open, fixed eyes; the muscles of the face are convulsively contracted. The patient is mute, even if single motions of the lips sometimes show that he would like to speak. The limbs, which are held without motion, may be bent without much resistance, like wax (*flexibilitas cerea*). The patients are able to remain in cramped positions for a long time, much longer than they could in the normal condition, a fact which should be connected with the circumstance that the patient has contemporaneously lost the feeling of fatigue, and even the feeling of hunger and thirst is absent. In many cases the motionless condition of the patient may be explained by *katamnesia*, as brought forth by a "command." There are anesthesia and analgesia of the skin, exceptionally, hyperesthesia. The pulse is somewhat slower, the temperature is generally subnormal.

This anxious stupor may be brought on by melancholic, hypochondric or paranoic delusions. In reference to the first, delusions of transgression or crimes cause the patient to become rigid. In hypochondric states the delusions of having no longer organs, or of being made of glass, possess the patient. In paranoic delusions, fear of enemies, fear of betraying his presence to his enemies by a movement, etc., make the patient motionless. Sometimes paranoic delusions cause him to think that his enemies hold his tongue, hands, and limbs.

With these delusions are connected in most cases hallucinations, which strengthen the anxiety and the immovability (delusional stupor, Newington). One sees his children slain before his eyes, another believes that he is in the midst of a conflagration, a third is in a battle and is afraid of getting into the fire or encountering a hostile sword at every motion. Sometimes the voice of God calls to the patient not to move, or the voice of the pursuer, which threatens him with severe punishment if he stirs.

Anxious stupor appears especially in melancholia, but is



also observed in delirium hallucinatorium, in alcoholism, in the depressive phases of paresis, as well as in hysteria and epilepsy. It sometimes appears in the last as a post-hysteria or post-epileptic condition, or as an equivalent. Disregarding the epileptic stupor, after which the memory is generally much obscured or lacking altogether, in the other cases of stupor the memory is seldom preserved entire and is often considerably impaired. Sometimes the stupor passes into a state of excited confusion, with delirium, which is then followed by the condition preceding the stupor.

The highest degree of this anxious stupor has been designated from antiquity (Cælius Aurelianus) by the name of *cataplexy* (from *κατα λαμβάνειν*, to seize suddenly). The patient is designated as *stipitis sive trunci instar mortui ritu jacens*.

The condition of cataplexy may also be artificially induced in predisposed individuals, by hypnotism.

#### (b) The Maniacal Stupor.

In contrast to the anxious stupor, the conditions of which have just been described, there are rare cases of very peculiar religious delusions with blissful content: of being in Heaven, of speaking with God, of the patients becoming enraptured (*ecstasy*). In these conditions the patients appear motionless dumb, but betray their internal excitement by the expression of their countenances. This maniacal stupor is observed especially in hysteria and epileptic psychoses.

#### (c) The Katatonic<sup>1</sup> Stupor (Negative Stupor).

The arrest of motion depends here upon an "obstruction" (Kraepelin). This obstruction proceeds from hallucinations and delusions; the attempt at any motion is suppressed by antagonistic motions. The patient sits or lies with partly closed blinking eyes. The mouth is often pushed forward, the lips sometimes are pointed like a proboscis (snout cramp). The head is inclined forward, the face and limbs appear rigid like those

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<sup>1</sup>From *κατά* and *τείνειν* (to draw): sudden attack of a state of tension of the muscles.

of a statue. The patient is mute or only murmurs single unintelligible words. If one attempts to place his limbs in a different position, the patient resists, and if overcome the extremities return very quickly to the previous position. Often, however, they retain the extremities in the position artificially given them, as was described in the anxious form of stupor, as there are generally many transitions between the anxious and negative stupor, and sometimes both forms may be seen at different times in the same patient. Occasionally in this condition there are quick, sometimes violent movements, swift grasping for a glass standing beside the bed, emptying its contents, speaking single words, going from the bed to the door. These movements show something of an impulsive, impellent disposition, and have a more or less stereotyped character.

The muscles of the body, especially the abdominal muscles, particularly the recti abdominis, feel tense. As in the stupor of anxiety, so also in this katatonic stupor, the capability of attention is often present to a considerable extent, if not so completely. Hence the patients are able to report, after they have recovered from the stupor, what has taken place.

This last fact is often lost sight of by physicians and attendants. The lethargic and apparently indifferent condition in which the patient lies causes them to believe that he understands nothing at all of what is said in his presence or what may be done there. The convalescent prepares disagreeable surprises for them by his accounts of rough or unseemly utterances or actions, occurring near him while he lay in stupor. The appearance of the above-mentioned impulsive movements, in which the patient may undertake violent actions against himself, makes it necessary that those in a stupor condition should be constantly and carefully watched in spite of their *apparent* loss of motion and incapability of action.

The katatonic tension may be referred to pathological changes of the muscular feelings, as hallucinations in the muscular and kinesthetic senses. The external resistance which is shown in the defensive movements of negativism may be generally referred to delusions, especially those of a hypochondric and paranoic nature. In sporadic cases, where the patients had had "snout cramp," they informed me

that they had held their mouths in this way in order to guard against the entrance of poisonous substances.

Sometimes, also, visual or auditory hallucinations force the patients to resistance.

Katatonic stupor appears in hypochondric melancholia and paranoia, especially at the time of puberty; also in epileptics, in paretics, sometimes in delirium hallucinatorium.

#### **(d) The Hypotonic Stupor (Anergic Stupor, Newington).**

In these cases a hypotonia of the muscles is connected with the clouding of the consciousness; the expression of the countenance is vacant, idiotic, the muscles of the face are hypotonic or atonic. The mouth is closed, the lower jaw hangs, saliva trickles from the mouth, and pieces of food placed in the mouth remain undisturbed, stools and urine pass involuntarily.

Every movement of the head, trunk, and extremities is allowed to be carried out without resistance. After the cessation of the mechanical action, the body or the agitated member follows the law of gravitation and the uplifted arm sinks to the side.

This form of stupor appears especially clear in dementia acuta, is also observed as a post-epileptic condition and after hysteric attacks, sometimes after paralytic attacks and in alcoholism.

The duration of the stuporous states may be transitory for minutes or hours (especially in hysteric or epileptic patients, sometimes, also, in paranoia and paresis), but may be protracted for weeks and months.

A more pronounced *lowering* of the consciousness, even to its extinction, takes place in apoplectic attacks, in epileptic seizures, in poisonings (apoplectic form of intoxication), and constitutes, with its different degrees, the transition to death.

We distinguish here somnolence as the lowest degree, followed by sopor, coma, and, finally, carus. There is no exact demarcation between these different degrees of unconsciousness. We generally designate as sopor that degree in which there is still a reaction and a short transitory state of awaking, through strong stimuli, while stimuli have absolutely no effect in coma.

The clouding of the consciousness may, finally, continue

with such a heightened agitation that it forms externally the image of *raving*.

We distinguish:—

### 1. *The Maniacal Form of Raving.*

The patients jump, dance, clap their hands, sing, laugh, weep, cry out, cannot be kept in bed, tear their clothes, run around naked, drum on the door, strike on the window-panes, run against the doors, destroy what is not nailed fast, seize persons who approach them, are especially eager to grab spectacles, watch-chains, strike at and wound those about them.

This is a psychomotor impulsion, which generally enters with feelings of pleasure, but may also be called forth and continued by emotions of anger.

The countenance generally shows a serene, joyful expression, the eyes are quite often of special brilliancy. Illusions are seldom wanting, often there are also hallucinations, especially of the vision. The sensory feelings are depressed or wanting.

The purest picture of this maniacal raving is shown by mania in its frenzied stages, sometimes also in the periodical form of the same, and in the maniacal stage of circular psychosis. Further, it appears in delirium hallucinatorium, often in the maniacal stage of paresis (with sluggishness or rigidity of the pupils, disturbances of speech, variation of the tendon reflexes, apoplectiform attacks), in intoxication psychoses, in hysteric and epileptic psychoses.

### 2. *The Anxious Form of Raving.*

The patients cry out, lament, howl, call "help," "fire," "air," "I stifle," tear off their clothing, destroy everything which is near them, injure themselves and others severely.

Meanwhile their faces wear a much-distorted, anxious expression.

Illusions or hallucinations are never lacking here.

This raving state may represent the highest degree of an anxious melancholia; it appears intercurrently as the acute heightening of melancholic anxiety, as *raptus melancholicus*; appears in hypochondric melancholia, with anxiety that the

air is poisoned, that death must come at once. Even paranoiacs may become raving temporarily in the anxiety which the anguish from their persecutors brings on.

Further, anxious raving appears in paresis (melancholohypochondric stage), in senile dementia, in delirium hallucinatorium, and in various intoxications, especially in the stage of abstinence (alcoholism, morphinism).

Raving epileptics belong, together with raving alcoholists, with the most dangerous of the insane; in epilepsy anxious raving often appears as a post-epileptic psychosis, sometimes, also, as an equivalent.

The attacks of raving may pass off in a few minutes (see mania transitoria), especially the anxious form, but may last hours, days, or even many months; they may, however, continue indefinitely, with short remissions.

A quick transition to death is observed in the raving of so-called delirium acutum.

Twilight states, stupor, and raving may interchange in the same person, that is, they may pass from one condition into another; stupor may follow the twilight state, raving may follow the stupor, and inversely.

Sometimes a deep sleep is the conclusion of the former condition (often in epileptic, less often and less marked in hysteric psychoses).

## **VII. THE DISTURBANCES OF SELF-CONSCIOUSNESS**

appear:—

1. As a deficient or abnormal development of itself, as in imbeciles and idiots. As it is generally impossible for these patients to create conceptions by their own mental processes, they succeed still less in the creation of an Ego.

2. A normal self-consciousness can exist only in the normal clearness of the consciousness. According to this, the last must be disturbed in all pathological conditions in which its clearness is lacking and of which we spoke just now.

3. A falsification of the self-consciousness must appear where the content of the consciousness is falsified, not transi-

torily, but repeatedly. In the struggle of the Ego, which often takes place at first against such falsifications, it is finally conquered if the disease continues. From the falsification of the consciousness those cases are developed in which the patient believes that another person is concealed in himself, an "alter ego," who guides or inhibits his actions, who holds his tongue firmly, speaks in him (duplication of the personality).

4. If the pillars of consciousness on which the Ego conception has been built are destroyed, the self-consciousness crumbles, and, finally, we come to the destruction of the personality (mental weakness to the highest degree of dementia).

5. Where unconsciousness exists there can, of course, be no self-consciousness. But, on the contrary, there may be consciousness, even if it be falsified and pathological, while self-consciousness is lacking. In pathological conditions a consciousness, that is, a self-completion of mental details, may be present, and is present in the different twilight states, while self-consciousness is lost.

Since the essential content of self-consciousness consists in the relation of the Ego to the outer world, the disturbances of the self-consciousness will manifest themselves externally in the anomalies of the actions.

A considerable part of these disturbances in the sense perceptions, in thought and the feelings, and in the content of consciousness may be present occasionally and transitorily, single ones even persistently, without there being any mental disease. But if there is a persistent disturbance of the self-consciousness, it is an absolute proof of insanity.

## **VIII. THE DISTURBANCES OF ACTION.**

### **1. Reflex Actions.**

Reflex actions in which the incitation, without the assistance of other ideas present in the consciousness, but especially without the aid of those which are to a marked degree accentuated in the self-consciousness and constitute the personality producing the action, are present in the insane in a much more extended degree than in the normal individual.

The incitation may act by a sense perception, in a real or hallucinated idea, or one called forth momentarily by that, or in an idea of memory, in a feeling, in the momentary content of the consciousness which is falsified by hallucinations and delusions. If the sense feelings form the impulse, we speak of *instincts* and designate the actions as *instinctive actions*. If especially strong feelings of pleasure or displeasure are the point of departure, we call the actions thence proceeding *emotional actions*, whose reflex nature is also shown in the external image of what is found in the emotion.

Such reflex actions appear in the insane:—

(a) From the weakness of the contrasting ideas contained in the self-consciousness, so in all states of mental weakness. So far as immodest actions are observed, their carrying out is favored by defective development, laxity, or disappearance of the feelings of judgment.

A part of the actions arising on the basis of so-called moral insanity are to be considered reflex actions, which have been excited by momentary stimuli or emotions and are transformed into actions without inhibition.

(b) With clouding of the consciousness; thus, in the twilight states in which the capability of action is retained, the momentary sense-impression is transformed into an action, or an occupation already engaged in before the beginning of the morbid state, which is continued (the musician continues playing, the tailor continues sewing, etc.). Also, an idea, reproduced in the condition of the elimination of consciousness, may evoke a deed which would have remained undone in normal states of the consciousness, from the resistance of the self-consciousness. From this, the carrying out of an action does not show its responsibility as being inspired by the relations of the person, perhaps its carrying out was designed.<sup>1</sup>

These actions are observed especially in epileptics and alcoholists, sometimes also in hysteric twilight states (which see).

If the clouding of the consciousness, as in maniacal raving, is connected with an unnatural excitement of the movement impulses, the incitations appearing in the sensory and sensorial

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<sup>1</sup> Moeli, Zeitschrift für Psychiatrie, vol. lvii, 169, 1900.

spheres become released so much the easier in reflex actions, and even in those of a violent character. In anxious raving the actions correspond to the incitation in a brain having immoderate emotion.

(c) In the manner of tics, as we know them in hysteria and chorea, as, *e.g.*, onomatomania and coprolalia, there arise in the insane, in consequence of feelings appearing momentarily (especially feelings of the muscles) or ideas, a reflex ejaculation of words, determined movements and determined actions. Some of the so-called automatic movements rest on the reflex unfolding of determined returning feelings.

(d) With falsification of the content of the consciousness, but with outer circumspection preserved, a sense-perception, entering momentarily with the lively emotion, may transform this at once into an action. The paranoiac who is hallucinated hears, while walking, an abusive word uttered; a box on the ear follows this immediately. A paranoiac sees a person, who is approaching him on the street, spit, and he at once strikes at him.

(e) The easy entrance of the reflex actions, finally, distinguishes a series of men, belonging in the class of inheritors, who stand on the border-land between mental health and mental disease. The suddenness, quite often violence, of their actions, which follow immediately the sensorial incitation, impulse, emotion, or the idea of memory suddenly appearing at that instant, shows that they do not possess an intermediate stage of consideration and deliberation between the stimulus and the action.

## 2. The So-called Arbitrary Actions.

### (a) Pathological Heightening of the Activity (Hyperkinesis).

This sometimes shows itself on the border-lands of psychoses in inheritors in the morbid desire to begin everything, to exercise their powers with the greatest energy, to-day here, to-morrow there. Nothing ends profitably, from the unsteadiness and variability of their exertions.

In the insane the pressure of activity is shown very purely



in hypomania, then in all maniacal states, especially in mania and without inhibition, especially, however, without inhibition by the obstructing muscular feelings of fatigue, in maniacal raving. This is also true of the maniacal stage of circular psychosis and of that of paresis.

The anxious form of raving shows the heightened activity in movements for defense against the hallucinations and delusive images called forth by anxiety, or only as an outburst of anxiety externally.

The heightened activity of the restless, versatile idiot, of the demented, belonging to the type of chronic mania, and of many katatonic states, calls forth, in connection with the condition of mental weakness, many of the stereotyped forms of movements, as somersaults, jumping up and down from a chair, rolling about on the earth, incessant knocking on the door.

#### **(b) Pathological Diminution of the Activity Even to Its Destruction (Akinesis).**

This may be conditioned:—

1. By *stupor* (see this). The paralysis of the motor apparatus excludes the capability of action, or, at least, limits it considerably.

2. By *opposition* to every commanded action or any presented by circumstances (negativism).

The patient does not open his eyes, does not open his mouth to eat, neither voluntarily nor when force is used; he will not move from the spot where he is. This negativism sometimes corresponds with a heightened obstinacy, as it appears in *children* who are not mentally diseased, and is quite often based on a certain fear (obstinate children who will not show their tongues to the physician, who shut their eyes from fear that they may suffer some pain, etc.). In other cases this negativism rests on a pathological change of the muscular feelings, consequently on an incitation to antagonism in the requisition of a certain muscle necessary for a certain motion. Finally, the influence of hallucinations, especially hallucinations of hearing, are often decisive for negativism. "If you move, you are dead," or, in the presence of hypochon-

dric delusions, the fear of being shattered, because the patients believe that they are made of glass.

3. By *general inhibition*, as it appears in the melancholic states and which is based on psychic pain. Each mental activity, each initiative tending toward bodily activity, provokes pain or heightens that already present.

4. By *sense-deception* and *delusions*.

The hypochondrially insane patient cannot be brought to any exertion, because he believes that his organs are destroyed, his hands and legs paralyzed, because he cannot think. Delusions of negation ("I do not exist," "there is no world") are followed by absolute inactivity. Auditory hallucinations may prohibit every activity as well as every movement for the patient; paranoic delusions force him sometimes to the most dissimilar positions, in which he remains immovable.

In most cases, *morbid lying in bed* is based on hypochondro-hysteric delusions. The patient will not leave his bed because he fears that he will injure his health out of it, or because every movement causes pain.

5. The *faulty development of the intelligence* and the diminution of previous existing intelligence, the lack of ideas emphasized with sufficient power to induce a motor expression corresponding to themselves, lead to the limitation of every activity and, finally, to incapability of action. There remain certain conventional expressions which are perfected by well-worn paths, which sometimes may take the character of stereotyped actions, repeated without object; furthermore, an imitation of what has been shown or done before, objectless repetition of single words or sentences; finally such actions as are necessary for the gratification of sensual feelings.

These also vanish finally, and every activity is destroyed in apathetic idiocy, with or without motor paralysis.

### (c) Qualitative Changes of the Activity.

So far as these do not belong under (a) *Hyperkinesis* and (b) under the phenomenon of *Akinesis*, qualitative changes in action are shown:—

1. In the *disease of certain sense centers* with the phenomena of word-deafness, paraphasia, paralexia, paraphrapia,

parapraxia (change of the usual articles of use), paramimia (not the tone of the corresponding expression of the countenance).

2. In the state of confusion (see VI. The Disturbances of the Consciousness).

3. By a *fixed direction of the action*, which is given by determined hallucinations or delusions (suicide in the melancholics, morbid extravagance in the megalomaniacs, persecution in the paranoiacs, all kinds of defensive actions in the hypochondriacs [blowing, spitting, etc.]). The actions arising in this manner sometimes assume peculiar forms, according to the developing mental weakness or to that already present, which appear as habitual movements with peculiar manners (Kraepelin): hopping, stretching straight forward the stiff hand to shake hands, taking a spoon by the extreme end, disordered clothing, peculiar attire.

4. In the circumstances which have been designated as *moral insanity*.

The analysis of the striking actions of the insane is an important task of clinical observation. Frequently enough the report of the convalescent shows how well motivated the apparently "senseless" actions were from the standpoint of the patient. But this analysis is especially the task of the specialist in forensic medicine.

An example may be given here.

*Theft* may be committed by the insane under the following conditions:—

1. As a reflex act:—

(a) In states of *mental weakness*: the imbecile, the paretic, the senile dement, the epileptic or alcoholic weak-minded person takes a gold piece which lies before him, the sausage which hangs before the butcher's shop, the fruit which is offered for sale in the streets; the act follows the impulse of the thought, and it is not obstructed by opposing ethical ideas. In many such patients, especially in paretics and the senile weak-minded, this reaches as far as the taking of all possible things, even the most worthless, as cigar stumps, paper cuttings, and like objects (*propensity for collecting*).

(b) In the *twilight states*, especially in the epileptoid

seizures of epileptics or paretics, or in the twilight states following epileptic seizures, the patients steal, either on the basis of a momentary sense irritation, or on the ground of a reproduced idea which at its first appearance caused the possession of the article to be stolen to seem desirable, or the carrying out of the theft was already contained in the idea. From this often proceed important thefts with burglary. There exists in all of these cases either partial or total amnesia.

(c) In *hysteric psychoses* tic-like thefts occur quite frequently, often after a short transitory state of anxiety, or the resolution of one; the tic-like thefts of the pregnant form a stepping-stone to a psychopathic condition.

The stolen articles are often useless, they are often thrown aside, quite often returned to the owner. A certain part of shop-lifting belongs in this category. The advent of these tics is favored by an existing menstruation.

## 2. As so-called arbitrary actions.

(a) In the *maniacal condition*, in hypomania, mania, periodical mania, in the maniacal stage of circular psychosis, the taking away, sometimes violently, of articles is the expression of the universal impulse to activity. With the rapidity of the efflux of the ideas the contrasting ideas do not appear at all, or not with sufficient force.

(b) In the *state of confusion* thefts may be perpetrated, besides all sorts of other disorderly actions.

(c) *Delusions* may be the cause of thefts in various ways. The paranoiac steals to revenge himself on the world or on a certain person who has injured him and continues to injure him. Another paranoiac steals to show that he is the second Messiah and can do everything without discovery. The paretic in megalomania takes things because everything belongs to him, since he is the ruler of the world; he steals in order to make another a present, and wonders why so much uproar is made about it.

(d) With the *morally insane* the desire for stealing sometimes appears even in childhood: "He steals like a raven, we cannot leave anything around." The ordinary thief is sometimes recruited from these patients after they have shown their incapacity for getting along in an honest way.

(e) Sometimes certain *morbid sensual impulses* give rise to thefts, as in fetichism.

In a case I observed an elderly, well-to-do man was caught in the act of taking the white handkerchief from a woman's gown. A search of his house (the man was a widower) revealed eighty-seven handkerchiefs which he had stolen at different times, since he could only practice onanism with the white handkerchiefs which had been used by women. This occurred in a man mentally weak after cerebral apoplexy.

In a similar way the most varied criminal actions, *e.g.*, arson, by those mentally diseased, may be analyzed.

## IX. THE DISTURBANCES OF SPEECH, WRITING, AND THE EXPRESSION OF THE COUNTENANCE.

1. Some of the insane do not speak. The loss of speech may be conditioned:—

(a) By the *lack of ideas*, or, at least, of ideas powerful enough to seek utterance in speech (alogia).

This is found in idiocy and apathetic amentia.

(b) By a *state of stupor*.

(Here sometimes from the lack of the capability of synthesis: "I did not know what I ought to say.")

(c) By *sense deceptions and delusions*.

The patient considers that he is not worthy of speaking; he fears injuring some one if he should speak, fears to commit lèse majesté (melancholic delusions), or believes that he has no tongue, no larynx (delusion of negation), or that these are held fast by a hostile power, or that he would betray his presence to his enemies by speaking (paranoic mania).

We designate this forced mutism as *mutacism*.

(d) By a *hysteric anesthesia in the region of the vocal apparatus*, similar to the condition present in hysteric amaurosis, in hysteric deafness, etc., which causes in the patient the idea that he cannot move the vocal cords—*hysteric mutism* in hysteric and hystero-epileptic psychoses.

(e) By *faulty development of the motor speech center* in consequence of faulty development of the auditory center

(deaf-mutism), or in consequence of disease or destruction of the motor speech center (motor aphasia).

The first appears in idiots and imbeciles, sometimes, also, in deaf mutes who have become insane in later life; the last as a focal phenomenon in various organic psychoses.

(f) By the *destruction of the motor conduits* for the muscular contractions which are necessary for speech—*anarthritic* deafness (in the most various organic psychoses; paresis, senile dementia, post-apoplectic psychosis).

2. In those insane individuals who do talk, a pathological change of the speech may be conditioned:—

(a) By the *morbid disturbance of the ideas*.

This is especially strikingly shown in the states of confusion in which the associations occur without law or order, and, corresponding to this, the words are intermingled in wild confusion.

It is the same when the associations are arranged entirely according to the sound of the words (tea, Themis, Themistocles), or according to certain external landmarks (song, opera house), or are spoken in forced rhymes (especially frequent in maniacal states, also in acute intoxications, especially alcoholic intoxication).

Further, the speech will be abnormal by the *expression* of delusions (*dysphrasia vesana*).

Here, sometimes, it reaches, especially in paranoia, but also in delirium hallucinatorium, in alcoholism, in paresis, generally in connection with auditory hallucinations, to the forming of new words—*neologism* (“creator of chronixils,” “akusmatic,” “foscileur,” etc.)—or to peculiar nonsensical connections of a series of adjectives with a noun: “singing, flying, roaring air pressure.”

In sporadic cases the anomaly of speech is shown in speaking a foreign language sometimes very well instead of the mother tongue. One of my female patients with periodic mania spoke only French during the attack; a female teacher in a common school did the same during a hysteric psychosis; a paretic, who had spoken only High German before, spoke only Platt Deutsch from the beginning of his disease.

(b) By *pathological disturbance in the ideas, connected*

with *irritation or paralytic phenomena in the cortical speech center.*

To the *irritation states* belong *verbigeration* (Kahlbaum): Continual repetition of single words or phrases; sometimes they are expressed with peculiar gestures and grimaces, with or without rhythm, oftener with a certain pathos which is specially distinguished by nonsensical repetition.

Verbigeration is observed in katatonic conditions, in epileptic and alcoholic deliria, in paresis, especially after paralytic attacks, also in senile dementia. We assume that here an irritative condition in the speech center causes the repetition of the same words and sentences, just as in a form of echolalia, in which the patient repeats what he has just heard. This echolalia appearing in choreic psychoses, but also in katatonic states, is to be distinguished from the echolalia in the demented, which will soon be discussed. A state of irritation in the speech center also exists in hallucinatory echo-speech, in which the patient is obliged to repeat the word of his hallucination.

A *paretic* condition of the speech center, on the contrary, must be assumed in *perseveration* (Neisser). There is here an adherence of the appropriate motor idea in the speech center, the patient answers the first question correctly, but gives the same answer to the following questions. Sometimes even the first answer is incorrect.

Perseveration is often found in the course of aphasia, and a transition to it is found in the physiological intercalation of single words or syllables in speech (angophrasia, Kussmaul). Perseveration appears in the same mental conditions as verbigeration, sometimes it alternates with this. It is also observed in twilight states, with brain tumors, in paresis and senile dementia, mostly in consequence of paralytic attacks.

(c) By *pathological processes in the speech center.* The *echo speech of the demented* shows a reflex from the auditory center to the speech center. Such patients echo what they have just heard like a phonograph. As an *irritative condition* in the speech apparatus (the) is to be considered, especially in choreic and epileptic psychoses, the ejaculation of single words (onomatomania—where the words have an obscene significance: coprolalia) (onomatomania in those psychically

normal generally rests on habit, *e.g.*, uttering the word which is "uncalled for"). The *paralytic states* in the sensorial speech show themselves as word-deafness, where, on account of the faulty comprehension of the question, the answer given may appear wholly nonsensical, or is changed by paraphasia.

Word-deafness, with or without paraphasia, is sometimes erroneously diagnosed as psychosis with confusion. The patient who, in consequence of his word-deafness, answers the questions asked him in a nonsensical way, and who performs the most foolish actions through his inability to recognize objects, their significance and use, a condition quite often connected with word-deafness, as sticking the comb in his mouth, trying to eat soup with his fingers, and similar acts—is often considered insane, whereas the condition is one of focal disease of the brain. Thorough examination of his mental status and of the peripheral nervous system (dexter hemiparesis), and the apoplectic onset of the disease, will confirm the diagnosis of focal disease. Intercurrent and complicating them, such states enter into the organic psychoses, in brain tumors, in syphilitic psychoses, and in paresis.

(d) In regard to the *unnatural* efflux of speech, we distinguish excessively rapid speaking (logorrhea) even to delirium of the tongue (tumultus sermonis), especially present in maniacal states. The opposite of this is constituted by speaking too slowly (bradyphrasia), present especially in melancholiacs, in katatonic states, in paresis, in brain tumors, and in terminal dementia.

(e) The *change of the grammatical construction* of the sentence (*agrammatism, akataphasia*) is shown by the use of the infinitive, or the patient leaves out the conjunctions, he changes the prepositions, the pronouns. Present especially in idiotism and in organic psychoses with aphasic disturbances.

(f) Finally, stuttering (*dysarthria syllabaris*) and stammering (*dysarthria literalis*) are to be mentioned in this connection. In the latter one consonant is used in place of another, preferably in the place of r (pararhotacism) or of s (parasigmatism) an l, w or f, g. Stuttering and stammering are especially observed in idiotism, stammering, also, in organic psychoses, especially after apoplectic attacks.



(g) The *tone of the voice* is sometimes weak, lisping, monotonous, especially in anxious states, sometimes rough, loud, especially in maniacal states in consequence of the imperfect closing of the vocal cleft. It is nasal, in paralysis of the velum palati; deep, in laxity and atrophy of the vocal chords (organic psychoses, especially paresis); bleating (egophony), in hysteric psychoses.

A particularly complicated kind of speech disturbance is shown by paretics and will be discussed fully in the chapter on paresis.

3. The writing<sup>1</sup> of the insane in regard to its *content* is formed according to their speech.

Their specimens of writing are sometimes especially valuable, because many patients confide to paper what they are afraid to speak (especially in hallucinations).

The emphasis, underscoring of certain words often point out the dominant system of insanity, which may also be expressed in cabalistic signs, in cipher, and the like.

Verbigeration and perseveration are expressed on paper as in speech.

Often the first lines of the writing are intact in content, and first show the pathological disturbance further on.

In connection with delusions and hallucinations, sometimes an *obsession to write* appears. The patient asserts that another guides his hand and forces him to write certain words or sentences of which he knows nothing himself and which he does not wish to write.

The *maniacal* state is shown in the *form* of the writing, viz., by many underscorings, by numerous exclamations, by directions: "per the tube post," "per the express messenger," by blots and other stains; the *micromaniacs*, sometimes by the very small writing; the *paranoiacs*, especially in querulant insanity, by massiveness and thoroughness, by neologisms; the *paretics*, by leaving out letters and syllables or their transposition, and by syllable-stumbling. Finally, it culminates in forgetting the script letters, and the patient scribbles all over the paper.

The letters may be pathologically changed, either by being

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<sup>1</sup> Erlenmeyer, *Die Schrift*. Stuttgart, 1879.

irregular and atactic (approximation of the writing of the adult to that of the child just learning to write, excessive letters, the straight line is not observed, hair strokes are zigzag-shaped; or there may exist trembling, as in paresis, alcoholism, and senile dementia).

[Mirror writing is the act of writing a word from right to left or in the direction of the left hand, in contradistinction to the usual method from left to right. It is called mirror writing because it can be easily read in a mirror, where the reflection appears as in ordinary writing.

According to Savage,<sup>1</sup> mirror writing is met with in some forms of mental weakness, and in conditions of mental disorder allied to the hysterical; occurring in imbeciles, paretics, especially in apoplectic psychoses, also in cases of moral perversion, where it may be only temporary, and being observed more commonly among women than among men, and most easily acquired in highly nervous people. Mills in 1894<sup>2</sup> reported a case in a boy 15 years old, who would be classed with the highest grade of imbeciles. Ireland gives the details of several interesting cases (quoted by Mills), one a paralytic imbecile girl, between 11 and 12 years old when studied; another was a genetous imbecile girl of 14; another, a congenital imbecile of 12; another, a boy of moderate intelligence of 13. He also mentions two left-handed idiot boys who formed pothooks from right to left.

The left-handed show a physiological tendency to mirror writing. Of a class of six boys and girls who tried to write their names with their left hands, two girls and three boys wrote in mirror writing, and all of these were found to be left-handed. Out of another set of children, six were left-handed, and three of these were mirror writers.—Ed.]<sup>3</sup>

There are also patients who pronounce words in the same manner (*mirror speech*), that is, they use the last letter first and the others follow and place the first last; instead of "mother," they say "rehtom." (This mirror speech is sometimes used by school children. Imbecile children, who are often left-handed,

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<sup>1</sup> Tuke's Dictionary Psychological Medicine.

<sup>2</sup> Journal of Nervous and Mental Disease, 1894, p. 88.

<sup>3</sup> American Journal of Insanity, vol. LV., No. 1.

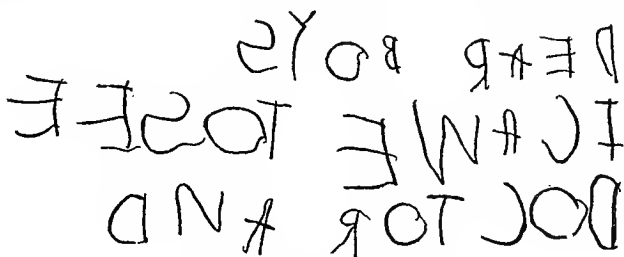
also frequently show a tendency to the reversion in spelling and pronouncing words).

4. The expression of the countenance in the insane may be:—

(a) A *maniacal one*, with lively play of muscles, glistening eyes, and a startling glance expressed by the constant movements of the eye.

Here, the play of the zygomatic muscles, the *pyramidales nasi*, and the *orbiculares palpebrarum*, which denote internal excitement with the feeling of pleasure, are especially vivid.

(b) A *depressive one*. The muscles of the face are in a hypertonic condition. The *frontalis* is contracted, hence the



Mirror-writing. (Collins.)

forehead is drawn into horizontal furrows, to which perpendicular clefts are joined by the contraction of the corrugators with the drawing together of the proximal ends of the eyebrows. The eye appears dull and dim, because the clefts of the eyelids are narrowed by the contraction of the *orbiculares palpebrarum* and the moisture of the tears is wanting. The mouth is closed by the contraction of the *orbicularis oris*, very often the corners of the mouth are also drawn down.

(c) An *observing one*. The expression of the face is that of a man who waits for something with a certain degree of tension, the ears are "pointed," the eyes fixed, especially in the hallucinated, who observe their illusions or hallucinations.

(d) An *idiotic one*. The muscles of the face are hypotonic, the eye is vacant, the mouth half opened, saliva flows out, and sometimes with this there is a pretense at smiling. (State of dementia; see also hypotonic stupor).

(e) A peculiar expression of the face has been mentioned above in the discussion of *katatonic stupor*.

## X. THE PATHOLOGICAL DISTURBANCES IN THE CONDITION OF THE BODY.

### *Stigmata of Degeneration.*

[To classify the various stigmata of the degenerate, we may divide the life-history of the individual into three epochs:—

1. *The Pre-Natal Epoch*, embracing teratological evidence of degeneracy.

2. *Post-Natal Epoch*, where the evidence is purely objective or physical and functional.

3. *The Post-Developmental Epoch*, where the evidence is mainly subjective or psychical.

#### I. *Pre-Natal Epoch.*

The writer is at present unprepared to state positively in how far teratology is to be considered as evidence of degeneracy, but would go on record as stating that the causes underlying degeneration from a physical and psychical standpoint are in the majority of cases identical with those upon which the science of teratology rests.

#### II. *Post-Natal Epoch.*

*Physical Stigmata.* We may divide the physical stigmata into two subdivisions:—

A. Morphological deviations from the normal.

1. Deviations of the general proportions of the body.
2. Peculiar forms of special parts.

B. Functional deviations from the normal.

1. Lack of functional activity of the general organs of the body.
2. Lack of functional activity of the special organs.
3. Developmental irregularities, including habits.—

Ed.]

## 1. The Cranium and the So-called Signs of Physical Degeneration.

The cranial measurements of the living to be taken are:—<sup>1</sup>

(a) The *horizontal circumference*, measured with the steel tape measure, which is placed directly over the arch of the eyebrows and over the most prominent point of the occiput. Twenty millimeters in males and 30 millimeters in females are to be deducted for comparison with the naked skull.

In men 521 millimeters, in women 503 millimeters, is assumed as the average horizontal circumference of the naked skull.

Regular crania of over 550 millimeters are called kephalones (to be distinguished from the crania abnormally enlarged by hyperostosis or hydrocephalus).

If the horizontal circumference falls below 462 millimeters the condition is to be denominated microcephalus (nannocephalus).

(b) The *greatest length* (L), measured with the calipers, without reference to the horizontal plane, from the middle of the arcus superciliares to the most prominent point of the occiput. This should be (after deducting 20 to 30 millimeters for the scalp) 18.3 centimeters for men and 17.8 centimeters for women.

(c) The *greatest breadth* (B), measured with the sliding circle, perpendicularly to the sagittal plane, excluding the vertex and the posterior temporal fossa.

The points of measurement must lie in a horizontal plane.

After deducting 5 millimeters, the average in men is 15.0 centimeters; in women, 14.0 centimeters.

[The normal head, so-called, is judged by the ratio which the length of the head bears to the breadth, when viewed from above. The antero-posterior is to the bi-parietal diameter as 100 is to  $x$ , is the formula for determining the cephalic index ( $\frac{100B}{L}$ ). All length-breadth indices below 78 are considered dolichocephalic; 78 to 80, mesocephalic; above 80, brachycephalic; 80 to 85 and over, hyperbrachycephalic. All indices between

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<sup>1</sup> Rieger. Eine exacte Methode der Kraniographie. Jena, 1885.

70 and 90 may be considered physiological variations. (Peterson.)

The physiological variations dependent upon age, and the artificial deformities as practiced by the Polynesians and the

DEGREES OF CRANIO-FACIAL ANGLE. PROGNATHISM.

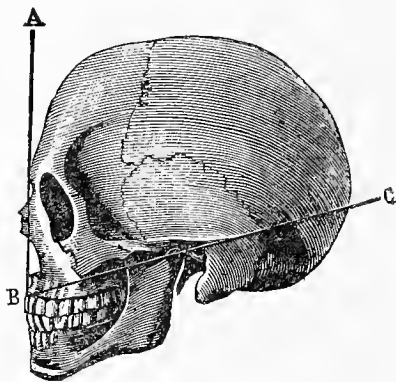


Fig. 1.—Facial angle of man.



Fig. 2.—Type of prognathous European.

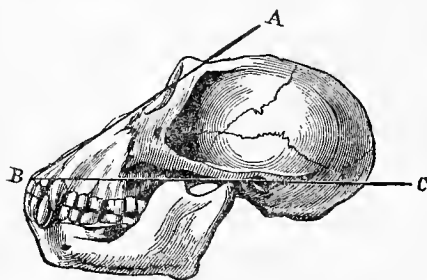


Fig. 3.—Facial angle of the chimpanzee. A, B, Facial line; B, C, horizontal line.

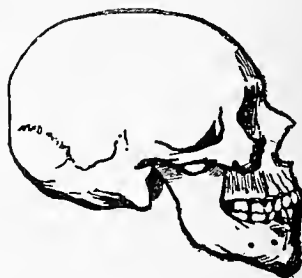


Fig. 4.—Prognathous skull of a criminal Italian woman. (Lombroso).

Indians of North and South America, must not be included among the irregular types.

The dolichocephalic or long-headed races are the English, Irish, Scandinavians, and Negroes, with an index of 73; Arabs, 74; Chinese, 76. The brachycephalic or broad-headed are the Germans, Russians, and Turks, with an index of 81; while the

mesocephalic or mediums are the American Indians, Hollanders, and Parisians, with an index of 79.

(d). *Facial Angle*. A line drawn from the anterior extremity of the premaxilla to the anterior extremity of the basi-cranial axis may be taken to represent the facial axis, and the angle included between these two is the cranio-facial angle. It varies with the extent to which the face lies in front of or below the anterior end of the cranium, from less than  $90^{\circ}$  to  $120^{\circ}$ .



Fig. 5.—A peasant with sanguinary instincts. Alveolar subnasal prognathism.—Schack.<sup>1</sup>

(Huxley.) Francotte gives the average for European races as  $62^{\circ}$  to  $80^{\circ}$ .

We designate as prognathous, the facial cranium whose angle reaches to  $82^{\circ}$ ; as mesognathous, where the angle varies from  $83^{\circ}$  to  $90^{\circ}$ ; and as hyperorthognathous, in which it reaches  $90^{\circ}$  or over.

Every normal face presents this sub-nasal prognathism, but when extreme prognathism or orthognathism is met with the

<sup>1</sup>La physionomie chez l'homme et chez les animaux, pág. 365. Paris, 1887.

condition is pathological. Excessive prognathism is found among criminals and microcephalics. Lombroso, in an examination of 40 criminals, found only three whose facial angle was  $80^{\circ}$  to  $81^{\circ}$ , while in the other 37 it ranged from  $68^{\circ}$  to  $74^{\circ}$ .

The face as a whole has been regarded for centuries as portraying the underlying deep-seated nature of the individual, and in every-day life is the mirror which reveals the sagacity, honesty, and good-will of its bearer. Its expressions have been as carefully studied as have been the emotions which give rise to them, but as yet no scientific study has been made of them.

As marks of degeneration we do consider asymmetries in the two sides of the face; unequal innervation of the facial muscles of the two sides; squints and tics of the facial muscles; a depression over the glabella, as observed in epileptics, due to over-action of the corrugators; the Lemurian hypophysis or abnormal development of the masticatory muscles, as described by Albrecht. Not to be included in these anomalies is the affection known as hemiatrophia facialis, or atrophy of one-half of the face, right or left side, due to some lesion, probably of the trigeminus.

Although the skull has been the subject of anthropological research for many years, each investigator endeavoring to formulate certain laws which shall be useful in distinguishing racial characteristics or in aiding the criminologist and alienist in deciding upon the degree of responsibility or irresponsibility of the indicted or suspected transgressor, yet their labors have not borne the desired results, as cranial deformities and dissimilarities are present in races, tribes, and even in members of the same families.

#### *Deviations from the Normal Skull.*

Virchow has given us a very complete classification of the deformities of the skull, based upon the observation that premature synostosis of a suture produces a shortness of the diameter, perpendicular on the direction of the obliterated suture; the bone stops growing prematurely where the synostosis has occurred, whereas the non-affected borders continue growing. Virchow's classification is as follows:—



### I. Simple macrocephalus.

#### 1. Hydrocephalus.

2. Kephhalones without hydrocephalus (or simply enlargement of the skull).

### II. Simple microcephalus.

The average circumference of an adult skull, male, is 52 centimeters, female 50 centimeters, the physiological variations ranging from 48.5 centimeters to 57.4 centimeters.

The macrocephalic skull, which in the large majority of cases is due to hydrocephalus, may be the result of a tubercular meningitis, or of obstruction of the venæ Galeni, or, as is usually the case, of foetal development and often hereditary.

Microcephalus is due to early ossification of the sutures and fontanelles and is frequently productive of idiocy, epilepsy, cretinism, and other degenerative neuroses. The causes of early ossification may be rachitis, or insufficient nutrition of the cranial bones from early obliteration of the nutrient vessels, or lack of development of the bony tissue from inhibition due to inflammatory changes in the sutures.

True microcephalus demands a bilateral and symmetrical lack of development of the entire skull. If the vertex of the skull is undeveloped whilst the basal bones attain their proper size, the Aztec type of microcephalus results. Another rather rare form of microcephalus results when the small skull with thick bones, and synostosis at the vertex, has the basal bones remaining cartilaginous; the petrous bone and the ethmoid are larger than normal, while the cerebellar fossa is unusually large; the cerebellum, pons, and spinal cord develop to the detriment of the cerebrum, which remains illy developed. Griesenger compares these idiots to birds, with their long-pointed and beaked nose and small, low, and short heads.

The degenerative tendency of microcephalics is well illustrated in a case published in the *Journal of Nervous and Mental Disease*, July, 1892.<sup>1</sup> The head measurements of this woman, possessing limited intelligence, age 27 years, 4 feet 11 inches in height, and of 110 pounds weight, were as follows: Circumference, 48 centimeters; occipito-frontal diameter, 14 centimeters; bitemporal diameter, 13 centimeters; biparietal diameter, 13

<sup>1</sup> Krauss, Wm. C.

centimeters; occipito-mental diameter,  $20\frac{1}{2}$  centimeters; sub-occipito bregmatic diameter, 16 centimeters. Married in 1884, she had given birth to five children, all of whom were microcephalic at birth. During dentition three of them became macrocephalic, undoubtedly hydrocephalic, dying of meningitis, and two died of convulsions, the head remaining microcephalic.

### III. Dolichocephalus.

1. Upper middle synostosis. Simple dolichocephalus (or long head), the result of synostosis of the sagittal suture. Sphenoccephalus (or wedge-shaped head) is due to synostosis of the sagittal suture, with compensatory growth in the region of the large fontanelle.

2. Inferior lateral synostosis. Leptocephalus (or narrow head), the result of synostosis of the frontal and sphenoid bones. Klinoccephalus, synostosis of the parietal and sphenoid bones.

### IV. Brachycephalus.

1. Posterior synostosis. Paracephalus (or thick-skulled), the result of synostosis of the parietal bones with the occipital bones. Oxycephalus (or steeple head), produced by synostosis of the parietal bones with the occipital and temporal bones, with compensatory growth of the region of the anterior fontanelle.

2. Upper anterior and lateral synostosis. Platycephalus (or flat head), produced by extensive synostosis of the frontal and parietal bones. Trochocephalus (or round head), the result of partial synostosis of the frontal and parietal bones in the middle of the half of the coronal suture. Plagiocephalus (twisted head), or oblique deformity of the head, due to the unilateral synostosis of the frontal and parietal bones.

3. Inferior median synostosis. Simple brachycephalus (or broad head), the result of early synostosis of the basal and sphenoid bones.

Besides these cranial deformities there is still another quite common type recognized by many observers as the trigonocephalus (or triangle-shaped head), caused by the premature union of the frontal suture. Characteristic of this deformity is the very narrow forehead corresponding to the vertex of a triangle, while the diverging sides of the cranium, terminating in a wide, flat occiput, correspond to the base of the triangle. An interesting example of this kind came under my notice about two years

ago in a paranoiac, who shot down the center of a supposed conspiracy which, as he thought, was directed against his mother. Besides other marks of degeneracy, the cranium possessed the well-marked characteristics of trigonocephalus.<sup>1</sup>

In addition to these well-known types of cranial deformity there are other stigmata which occur occasionally in the crania of degenerates, consisting in abnormally high or low development of certain arcs or diameters, prominent among these being the empirical greatest height of the head or the distance between the basion and vertex of the skull, the bi-frontal arc, and the bi-parietal arc.

The proportion of the length of the cerebral chamber to the basi-cranial axis (as 100) may rise to 270 in the higher and sink to 230 in the lower races. (Huxley.<sup>2</sup>) Expressed in centimeters, this height or basi-cranial axis averages 13.3 in men, 12.3 in women, and the physiological variation is from 11.5 to 15 centimeters.

The naso-bregmatic or frontal arc, or the line from the root of the nose to the bregma, expressing a high, low, or receding forehead, averages 12.5 centimeters in men, 12 in women, with a physiological variation between 10.9 and 14.9 centimeters.

The bregmato-lambdoid or parietal arc, corresponding to the length of the sagittal suture, averages 12.5 centimeters in men, 12 in women, with a physiological variation between 9.1 and 14.4 centimeters. (Peterson.)

Minimal measurements of the frontal arc are oftener found in the insane and criminals; the parietal arc is also said to be often shorter in the insane defective and delinquent classes and in epileptics. In these classes, however, maximal excesses also often occur. (Dana.<sup>3</sup>) Of 127 measurements made by Zuckerkundler upon insane subjects, 103 showed a typical variation, or more than 81 per cent. Wilson,<sup>4</sup> from measurements of the heads of 464 criminals, finds that the anterior portions are poorly developed and that the cranial deficiency is associated with real

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<sup>1</sup> American Journal of Insanity, January, 1895.

<sup>2</sup> Anatomy of Vertebrate Animals.

<sup>3</sup> Text-book, Nervous Diseases.

<sup>4</sup> Berry, J. J., Medical Age, February 10, 1896.

physical deterioration. Forty per cent. are invalids, and a still larger proportion of these are professional thieves. Asymmetry, though often existing in normal subjects, is much more constant and pronounced in the criminal and is frequently a characteristic mark of his family and descendants.

Skulls that are below the normal type in volume belong to abnormal individuals, especially the insane and criminals. A marked deficiency in any portion of the skull leads to the conclusion that the part of the brain subjacent to it is imperfectly developed. Voisin says that the proper exercise of the intellectual faculties is impossible with a head whose circumference measures from 28 to 33 centimeters or less.

Since lack of symmetry exists between the two sides of the body, so, too, in the skull of normally developed individuals we find variations in the size of the two halves of the cranium. As a rule the left side of the head presides over the right side of the body; and as the right side of the body is usually more fully developed than the left, and muscular strength is generally in excess on that side, it would seem to follow that the left side of the head should present the largest contour.<sup>1</sup> This proves to be the case, the left side being larger than the right in the proportion of three to one. As Brown-Séquard has demonstrated, the left lobe of the brain comes into greater use in its control of the right side of the body than does the right lobe in its control of the left side. Unequal muscular and cerebral development bear a relation also.

From a careful study and analysis of the cranial deformities and aberrations, it is generally admitted:—

1. That no special type or types of cranial deformity or irregularity have as yet been found pathognomonic of any class or classes of degenerates.

2. That wide variations do occur in the normally developed and well-balanced individuals.

3. But it must also be admitted that along with other physical, mental, and moral stigmata, these cranial variations are significant and important and are of the greatest value to the anthropologist, criminologist, and alienist.

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<sup>1</sup> Merz, C. H., *Medical Age*, December 26, 1891.

*The Ear.*

The ear, perhaps on account of its prominence and extreme liability to deformity and irregularity because of its cartilaginous structure, has been the subject of many papers and monographs by alienists and anatomists and plays an important part in the Bertillon system of identifying criminals.

The perfect ear, which is rarely met with, should be about twice as long as broad, and should be attached to the head almost straight or slightly inclined backwards, and should touch the head with the back of its upper point. Mothers and nurses are to blame for many of the irregular positions of the ears of children, but nature only for the deformities and irregular implantations which are so frequently met with in the degenerate classes.

Binder gives in his monograph the following analysis of Morel's ear (the ear of the degenerate) :—

I. Anomalies in the configuration of the ear as a whole.

1. The variations in size.
2. The implantation.
3. Abnormalities in the general configuration.
4. Inequality of the two ears.

II. Anomalies in the architecture and form of the parts composing the ear.

1. The lobule may be excessively long or adherent or absent, Coloboma lobuli hypertrichosis.

2. Anomalies of the helix.
3. Anomalies of the anthelix.
4. Anomalies of the crura furcata and fossa ovalis.
5. Anomalies of the tragus and antitragus.
6. Anomalies of the concha and fossa cymbæ.
7. Anomalies of the fossa scaphoidea.

From the analysis of these points he arrives at the following types of ears :—

1. The defectively implanted ear.
2. Excessively large ears.
3. Excessively small ears.
4. The excessively folded ear.
5. The irregularly shaped ear (especially the ear with abnormally small upper portion).
6. Ears varying in breadth.

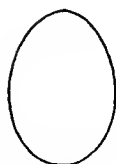
7. Blainville's ears (asymmetry of the two ears).
8. Ear without lobule.
9. Ear with adherent lobule.
10. Stahl's ear (1). The helix is very broad in the transverse portion and partly covering the fossa ovalis. The lower part of the helix is absent.
11. Darwin's ear (with marked tubercle at the beginning of the descending part of the helix).
12. Wildermuth's ear (anthelix prominent).
13. The ear without anthelix and crura furcata.
14. Stahl's ear (2). Wide bifurcation of crura; multiple bifurcation, especially of the upper crus.
15. Wildermuth's Aztec's ear. Lobule absent. The upper crus of the anthelix goes over into the flat helix without any demarcation; the lower crus is very deep and apparently absent, the upper crus thus forming the margin of the concha.
16. Stahl's ear (3). Only the crus anterius present; the crus superius merely a node of cartilage. The concha apparently divided by an additional process starting from the antitragus.
17. The ear with double helix, the crus superius not even indicated; rare.
18. Concha too large or too small.
19. The ear with a scaphoid fossa extending into the lobule.
20. Morel's ear; flat and broad in the upper parts. Crus superius broad, flat; scapha broad and shallow.
21. Malformations of cartilage, excluding the one caused by othæmatoma.
22. Atypical malformation, coloboma.

### *The Eye.*

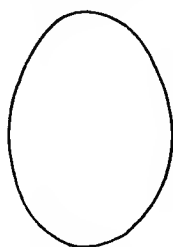
The eye, on account of its complex development, is perhaps prone to more variations and disturbances during its growth than any other organ in the body, and the evil effects of degeneracy are surprisingly shown in the formation of its various parts.

Taken as a whole the degenerate eye may be too large: (1) Megalophthalmus; or too small (2) Microphthalmus. The former condition must not be confounded with the exophthalmus so frequently met with in Basedow's disease, which is of func-

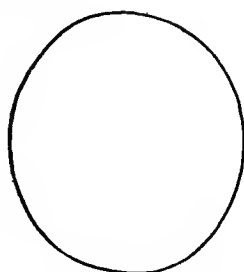
TYPES OF CRANIAL DEFORMITY.



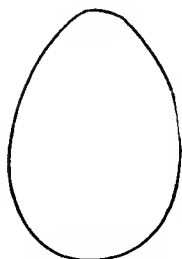
Microcephalus.



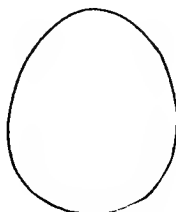
Normal.



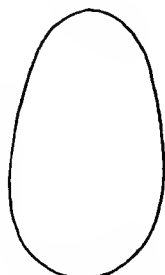
Macrocephalus.



Dolichocephalus.



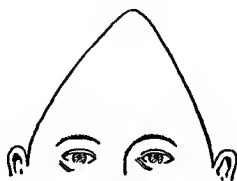
Brachycephalus.



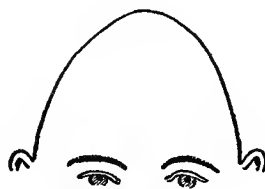
Leptocephalus.



Trigonocephalus.



Sphenocephalus.



Oxycephalus.



Platycephalus.



Trochocephalus.



Plagiocephalus.

tional nature, due probably to some disturbance of the sympathetic nervous system.

Microphthalmus is more often observed than macropthalmus, and its presence in a member of a family should lead to a careful examination of the family, with a view of detecting other stigmata of degeneration. A case recently came under my observation in a lad twelve years of age, whose sister I was called to see in consultation. The sister was found to have Friedreich's ataxia, a family disease. Not detecting this affection in any of the other members, I looked them over carefully, with the following result: In the family of three microphthalmus of the right eye was found in the brother referred to, and in the sister was found a Gothic palate, twisted uvula, and an irregular formation of the maxilla and mandible. One cousin was in the State hospital, and another was eccentric in regard to dress and society, and another had been insane. The father of the lad had been an alcoholic, and the mother died of consumption soon after the birth of the sister with Friedreich's ataxia. No information could be gleaned concerning the grandparents.

Other stigmata of the various parts of the visual apparatus are as follows:—

*Lids.* 3. Microblepharon. 4. Symblepharon. 5. Coloboma palpebræ. 6. Epicanthus. 7. Congenital ptosis.

*Cornea.* 8. Dermoid adhesions on the cornea, especially small tufts of hair.

*Iris.* 9. Coloboma iridis, partial or complete. 10. Aniridia. 11. Polykoria. 12. Membrana pupillaris perseverans. 13. Corectopia. 14. Asymmetrical coloration of the iris in whole or in part. 15. Oval or eccentric pupil.

*Interior of the Orbit.* 16. Coloboma choroidæa, congenital. 17. Coloboma lentis, congenital. 18. Staphyloma posticum scarpal. 19. Arteria hyaloidea persistens. 20. Persistent nerve fibers of the retina. 21. Retinitis pigmentosa.

*Muscular Defects.* 22. Nystagmus, congenital. 23. Strabismus, congenital.

*Physiological Variations.* 24. Hemeralopia. 25. Daltonism. 26. Abnormalities of the visual field.

Visual defects are common among the degenerate classes, and though sometimes acquired are generally congenital. Of 82



criminals examined by Ellis, 67 per cent. were found to have optical lesions; and out of 40 of the instinctive variety, 72 per cent. were thus affected. An examination of 101 children in a reformatory institution by Van Fleet disclosed the fact that 67 per cent. had defective vision.

The visual field has been thoroughly studied by the School of the Salpêtrière, Oppenheim and Siemerling, and recently by Ottolenghi, who states that the measurements of the visual field may be of great value under many circumstances in legal medicine:—

1. By the study of the sensibility in general and the psychic examination of the degenerates, as is shown by the investigations made of cretins and deaf-mutes.

2. By bringing out features that may be diagnostic of epilepsy and congenital criminality.

3. By furnishing symptomatic data not pathognomonic, but frequent in neuroses and traumatic epilepsy, and for testing the sincerity in certain mental states and unmasking skilled simulation.

#### *Hard Palate.*

The deformities of the hard palate have been carefully studied by Peterson, whose observations in this direction extended over a period of eleven years, and comprised examinations on upwards of one thousand persons (100 criminals, 600 idiots, and 500 neuropaths of other kinds). On account of the frequent mention of the Gothic palate, he had adopted an architectural nomenclature in the following classification which he offered:—

*Pathological Palate.*—“(a) Palate with Gothic arch; (b) palate with horseshoe arch; (c) the dome-shaped palate; (d) the flat-roofed palate; (e) the hip-roofed palate; (f) the asymmetrical palate, and (g) the torus palatinus. The seven varieties are to be looked upon merely as types. Each type presents variations and combinations with other forms. Among the flat-roofed palates would be included all such as are nearly horizontal in outline, as well as those with inclined roof sides but flattened tables. In the hip-roofed palate there is a marked pitch of the palate roof in front and behind. It is usual to find asymmetry

of the face and skull in cases with asymmetrical palate. The torus palatinus (Latin *torus*, swelling) was first mentioned by Chassignac as a medio-palatine exostosis. It is a projecting ridge or swelling along the palatine suture, sometimes in its whole length. It is always congenital, and varies considerably in both shape and size. But two or three cleft palates were found among the many idiots examined, and as a number of such palates had been found in subjects who were far from being degenerated, it was not thought proper to include the cleft palate among the well-marked stigmata of degeneration."

### *The Teeth.*

The abnormalities of the teeth and of dentition observable among the degenerates are briefly as follows:—

1. The notched teeth of congenital syphilis or Hutchinson's teeth, particularly well marked in the upper central incisors.
2. Persistence of the milk teeth, especially the eye teeth.
3. Abnormal length of the canine teeth.
4. Abnormalities in the shape of the teeth.
5. Abnormalities and irregularities in the position of the teeth.
6. Rachitic teeth.
7. The teeth of extreme prognathous races and individuals are much larger than normal. The roots of the premolars and molars are more distinct, and the last molar not so small relatively to the others. This is observed especially in the lower races, notably the Australians.

### *The Skin.*

Very frequently we find the skin of the degenerate sallow or pallid, perhaps leathery, the face prematurely wrinkled; the persistence of the branchial clefts and pre-aural sinuses are also of some importance, and the presence of large or small nævi or pigmented areas. The presence of tattoo marks on the arms and body is considered one of the predilections of this class of humanity. Generally the beard is scanty, while the growth of hair on other parts of the body is abundant. The writer remembers when a youth the sight of a man in bathing, whose entire body, with the exception of the upper part of the face, palms of

hand, and soles of feet, was densely covered with coarse black hair. The appearance of Jo Jo, the so-called Russian dog-faced boy, with Barnum's circus, many will remember as an example of this kind.

The presence of congenital spots or areas of baldness on an otherwise hairy head, or patches of gray hair appearing very early in life; the absence of the eyebrows or of the pubic hair; the prolongation of the eyebrows on the two sides until they meet at the median line; the scalp covered with coarse, heavy hair; the presence of hairy moles on various parts of the body; the presence of long tufts of black hair, especially on the back or abdomen, are all more or less significant. The absence of hair over the chest in adult males is constantly being referred to by Lanceraux as a sign of physical degeneracy, indicative generally of tuberculosis.—ED.]

In the genital organs appear hypospadias, epispadias, cryptorchidism; in females, very large clitoris, hymen in the form of two lips, not centrally perforated, oblique closing of the vagina.

These so-called *stigmata of degeneration* may have a certain value in mental diseases only when they are not sporadic, but appear in great number in the same person, since they appear sporadically in a great number of persons mentally sound, and the overestimation of the significance of these stigmata leads one to see the "degenerate" everywhere. They are especially frequent in idiocy, but appear, also, in the most various states acquired from insanity, and become, when they are present in considerable number, the sign of a considerable hereditary taint.<sup>1</sup>

## 2. The Disturbances of the Peripheral Sensorial Apparatus.

Changes in the peripheral apparatus of smell and taste have no special symptomatic significance in mental diseases. Those of audition will generally, if they are hereditary, impair the mental development.

The *eye* demands a special discussion.

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<sup>1</sup>For a full discussion of the Stigmata of Degeneration the reader is referred to Eugene Talbot, "Degeneracy, its Causes, Signs, and Results," Frederick Peterson, *American Journal of Insanity*, July, 1895; William C. Krauss, *American Journal of Insanity*, vol. LV., No. 1.

The hope that the ophthalmoscope would aid us in the knowledge of functional mental diseases has not as yet been realized.

On the contrary, it shows us the choked disc in the psychoses dependent upon focal disease of the brain, the atrophy of the optic nerve in paresis; alcoholic and albuminuric neuritis optica in alcoholic or uremic psychoses; syphilitic changes, cysticercus, and other phenomena which may be of importance for the correct diagnosis of mental disturbances.

The *pupils* in psychoses may be normal, unequal, much contracted (myotic), much dilated (mydriatic). They may refuse to react to light and accommodation, or they may simply remain rigid to the impression of light while they contract for accommodation.

If the pupils are unequal, one must first observe whether a local affection of the eye, especially a different refraction of the eyes, may not cause the difference. If this is not the case, such a difference may exist from childhood contemporaneously with an unequal development of the cranium on both sides (plagiocephalus). Unequal pupils appear transitorily in the most varied psychoses, and are quite often found in the state of terminal dementia. Associated with other paralytic conditions, they are often found in the organic mental diseases, especially in paresis. The symptomatological significance of an inequality of the pupils is enhanced when the degree of inequality changes, or when one, then the other pupil becomes more dilated.

Myosis is often the accompaniment of senescence, or is produced by medicines (morphine, chloral).

Pin-point pupils in the insane indicate some organic psychosis, in most cases paresis.

Mydriasis, especially the jumping kind, that is, changing with the eye, points generally to a developing or existing paresis.

Sometimes dilated pupils are observed transitorily in epileptics or in states of confusion.

The disappearance of the reaction of the pupils to light and accommodation is generally regarded as a symptom of a severe organic brain or spinal cord disease, provided there is no peripheral or nuclear affection of the oculomotorius nerves.

The symptom of *Argyll-Robertson* (loss of contraction of

the pupil when light strikes it directly, while the pupil contracts to the convergent movement of the eyeball, is found very frequently in paresis; then in luetic psychoses, especially in syphilitic basilar meningitis; furthermore, occasionally in senile dementia, in alcoholic polyneuritis, and in sporadic focal diseases of the brain. It is present transitorily in epileptic, but only exceptionally in hysterio-epileptic seizures (Westphal); likewise in deep drunkenness. (Regarded as a cardinal symptom of locomotor ataxia.)

In like manner, mydriasis, which results in the majority of cases under normal conditions through irritation of the sensory nerves, is often unattainable in these diseases.<sup>1</sup>

Sluggishness in the reaction of the pupils frequently takes place transitorily in the various psychoses, especially in the epileptic psychoses. At times in terminal dementia, exaggerated light reaction is present.

Sometimes (especially in paresis) an inverted type of the pupillary reaction to light is found, in that the pupils dilate with the ingress of light (*paradoxical pupil reaction*). On closer observation it generally appears that a contraction follows in the first moment, which quickly gives way to dilatation on account of the weakness of the innervation.

In pupils not reacting to light, on attempting to close the eyes violently by the muscoli orbiculares oculi, a contraction of the pupils may appear (Westphal, Pilcz<sup>2</sup>).

A continuous rapid spasmodic alteration of the size of the pupil of one or both eyes, due to tremor of the iris (hippus), is rare, most frequently found in epileptic and hysteric spasmodic states, sometimes in traumatic psychoses.

### 3. Disturbances of Sensibility.

Headaches, which have their seat now in the anterior part of the head, then in the posterior part, then at the vertex, are very frequent in the prodromal and initial stages of the functional psychoses, and in hysteric and epileptic psychoses; they are in-

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<sup>1</sup> Moeli, Archiv für Psychiatrie, vol. XIII, p. 602.

<sup>2</sup> Neurologisches Centralblatt, 1899, p. 161 and 248; 1900, p. 434.

clined to disappear during the height of the disease, only to return more strongly during convalescence.

In the same way, a migraine which has been present before the advent of the psychic disease usually departs during its course, to reappear during convalescence.

Hyperesthesias and neuralgiform pains are frequent in hypochondric and hysteric psychoses; but it is not to be assumed that determined nerve paths have definite relations to determined delusions. In intoxication psychoses (alcohol, diabetes, albuminuria), the various hyperesthesias and neuralgiform pains may be occasioned by a neuritis.

Ascertaining whether the skin is *hyperesthetic or anesthetic* in a given area is often impossible, on account of the state of consciousness of the patient.

Melancholiacs affirm, *e.g.*, in convalescence, that they felt every touch and every prick of a needle while they seemed entirely anesthetic and analgesic at the time of examination. The same is true of the states of stupor. In hysteric psychoses anesthetics of the most varied forms and of the most different distribution are very frequent; in the alcoholic psychoses, as in the most varied organic psychoses, disturbances of the sensibility are mostly conditioned by neuritis, medullary affections, and diseases of the pons. (See also paresis).

#### 4. Disturbances of Motility.

The muscles in the insane may be in a hypertonic, katatonic, or in a hypotonic state.

Besides stupor, in which these various states of tension have been observed and described, hypertonia appears in melancholia and in the depressive stages of other psychoses, katatonic tension, in hypochondric paranoia, in delirium hallucinatorium, in alcoholism, and in paresis; hypotonia, in the most diverse psychoses which begin with paralysis, besides being present in acute dementia.

*Spasms* of single muscles, likewise general and tonic spasms, are observed in idiocy, in epileptic, hysteric, and hysterio-epileptic psychoses, in intoxication psychoses, as well as in the organic psychoses, and are discussed under their respective heads.

The same is true of paralyses wherever they may be localized, with or without contractures. At this juncture the paralytic states of the bladder and rectum may also be discussed.

*Enuresis* (involuntary discharge of urine) appears in the insane:—

1. Because the patient does not pay sufficient attention to the need of urinating; urination follows reflexly, as in playing children. This form of enuresis appears in the demented, in mania, and in the states of stupor and raving.

2. Because the feeling of fullness of the bladder is diminished or extinguished. The urine is discharged entirely by means of reflex action. In paretics, in senile dementia, and sometimes in stupor, such is the case.

The anesthesia may be so strong that the patient does not notice the discharge of the urine. "Another has wetted the bed."

3. By paralysis of the sphincter vesicæ: the urine runs out constantly; present in organic psychoses.

4. In states of unconsciousness (epileptic, paralytic attacks). *Ischuria* (retention of the urine) is observed:—

1. In anesthesia of the bladder. The patient does not notice that his bladder is full, and on this account does not feel any inclination to discharge the urine. Along with this, the sphincter may be closed spasmodically (here belong the urine retention of melancholiacs, of many in stupor), or the detrusor vesicæ may be paralyzed (organic mental diseases, paralytic attacks).

2. In paralysis of the bladder reflexes (paresis and other organic mental diseases).

3. In consequence of delusions. The patient is forbidden to discharge urine, or he does not like to soil the vessel.

One should never hesitate, especially with demented or stuporous patients, to examine the bladder. Sometimes the urine is dripping continually, while the bladder is distended even to the umbilicus. (*Ischuria paradoxa*). When the sphincter is paralyzed, the urine simply trickles mechanically from the bladder (paresis, senile dementia).

The circumstances are similar in regard to the stools.

Constipation generally accompanies the functional psychoses.

It is especially obstinate in melancholia, and generally has its basis in the spasmodically inhibited peristalsis and the hypertonic state of the sphincter (hence in this condition opium often aids the defecation).

But sometimes it is delusions which prevent the patients from going to the closet: because they do not wish to defile it, or they are afraid of being infected there.

Involuntary passage of the stools (*secessus involuntarii*) may take place, as with enuresis.

In regard to the discharge of the stools, there is a condition similar to *ischuria paradoxa*, which appears especially in paresis—a constant flux of liquid stools, while the colon is filled with hard, firm, fecal masses (*scybala*).

The “uncleanly,”<sup>1</sup> who pass feces and urine at random, who discharge nothing in the closet, but immediately thereafter soil their clothing and bedding, and, as soon as cleaned, defile everything again, are a great trouble to institutions. Sometimes the uncleanness is premeditated, arbitrary (imbeciles with moral insanity, paranoiacs; occurs very rarely for simulation).

### 5. Disturbances of the Reflexes.

The strength of the *tendon reflexes* is very different in the different functional psychoses. Normally the strength of the patellar tendon reflex varies to a considerable degree, and is generally increased according to nutrition, while in the highest degrees of cachexia it becomes diminished, or may even disappear.

There is often exaggeration of the tendon reflexes in hysterical and epileptic psychoses, in quite a number of cases of paresis, in the psychoses of multiple sclerosis; unilaterally exaggerated in apoplectic psychoses or in the same with focal diseases. In these cases a patellar or foot clonus is present contemporaneously. A noteworthy difference in the strength of the patellar reflexes on the two sides points to a developing organic disease of the spinal cord or of the brain, or of both, and

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<sup>1</sup> Manheimer. *Du gâtisme*. Thèse de Paris, 1897.



is often observed before the complete disappearance of the reflexes (paresis, senile dementia).

Absence of the patellar reflexes<sup>1</sup> exists very rarely in normal individuals (I saw this once in a man and his fourteen-year-old son without any other symptom of a nervous disease), and it may be said with almost absolute certainty that the lack of the patellar tendon reflex in one mentally diseased points to an organic disease of the nervous system, whether it be a neuritis (alcoholism, diabetes, kidney affection), or to a disease of the posterior columns (especially paresis with medullary degeneration), or to an organic change in the posterior cranial fossa (cerebellar tumors, or affections of the pons).

Sometimes the tendon reflexes seem sluggish, that is, the reflex is not completed quickly, snappy, lightning-like, as normally, but takes place slowly, lazily, a phenomenon which often precedes the disappearance of the patellar reflex.

One should examine, besides the patellar tendon reflex, the reflex of the tendon of Achilles and that of the triceps tendon at the elbow.

Of the *skin reflexes* one should examine the plantar reflex, that of the cremaster and the abdominal muscles.

The strength of these reflexes varies greatly under normal conditions.

They are often very lively in hysteric and epileptic psychoses, frequently weak, on the contrary, in the depressive stages of the various psychoses. They are absent in *peripheral* paralysis of sensation and of motility. For the rest, their disappearance generally points to an organic disease, just as the disappearance of the tendon reflexes does, though the former are often retained where the latter are absent.

Absence on one side points to a cerebral organic affection (found especially in apoplectic psychoses).

The *reflex of Babinski* (the great toe is not flexed as normally in calling forth the plantar reflexes, but is extended)

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<sup>1</sup>One should only speak of such after placing the person to be examined on a table with naked feet and the legs hanging down laxly, while during the strokes on the tendon, the patient's mind is occupied by counting or otherwise.

points to an organic disease of the central nervous system, according to present observations.

Of the *mucous membrane reflexes*, the most important to examine are the conjunctival reflex, the reflex of the velum palati, and that of the pharynx.

These are often wanting where the skin reflexes are absent; moreover, they are especially absent in hystericals and alcoholists.

Of the *visceral reflexes*, the reflex of the pupils, of the bladder, and of the rectum have already been mentioned. The sexual reflex is often exaggerated in maniacal states, also in those of paresis; otherwise regularly depressed (often even in the incipient stages of paresis, in alcoholists, morphinists, in all depressive states), and generally vanishes entirely in organic mental diseases.

#### **6. Disturbances of the Vasomotor Nerves. Anomalies of the Secretions. Trophic Disturbances.**

*Angiospastic conditions* are observed in the insane as a feeling of coldness on the head, on the back, of the hands and feet; further, as local asphyxia of the hands and feet (in melancholia, also in other depressive states, hysteric and epileptic psychoses, in paresis). Præcordial anxiety is also brought on by a vasomotor neurosis.

Appearing in a slight degree, only as pressure and oppression in the region of the heart, it may increase to a feeling of anxiety, even deathly anxiety (which begins with a small accelerated pulse), the Hippocratic countenance (which later on becomes hot and red), cold extremities, retarded and superficial respiration (seven to nine inspirations to the minute), and with a general trembling of the body. Towards the end of an attack deep and sighing respirations set in. They often end with copious perspiration. At the height of the attack there is quite often a certain degree of mental stupor.

Præcordial anxiety is most frequent in melancholia, but appears also in the depressive stages of other psychoses, is found in epilepsy, in the pre- and post-epileptic states, and in epileptic psychoses, in the most diverse intoxications, and is observed in alcoholism and the privation morphine cures.

*Angioparalytic states* appear as transient reddening of various parts of the body, as dermographia, as edema (white and pale in hysteric psychoses), as cyanosis of the skin (in idiocy, in the later stages of paresis), as miliary hemorrhages under the skin, of the various internal organs (also bloody sweats, vomiting blood, etc.). One should be careful about assuming that great hemorrhages come from nervous causes. Wounds which the patient has received, or which he has inflicted upon himself, may easily become a source of deception.

The *secretion of saliva* may be *increased* in the insane (in mania with tough saliva as transparent as glass, in paresis, in paranoia with delusions of poisoning, saliva is abundant, first watery, then thicker and darker; further, mercurial psychoses); or it may be *diminished* (melancholia, certain intoxications).

An increase of the saliva is sometimes only apparent, since the patient does not swallow the saliva, but permits the whole quantity to flow out (stupor conditions, idiotism, dementia).

Increase of *perspiration (hyperhidrosis)* takes place sometimes in the incipient stages of paresis, often in alcoholism, in epilepsy, especially also with and after paralytic attacks.

Diminution of perspiration (*hyphidrosis*) occurs in melancholia especially, in the demented states of the most diverse psychoses, also pronounced in myxedema.

The odor of perspiration, which was once attributed to the insane as a peculiarity (mouse odor), is to be ascribed to uncleanness or to the foulness of the patient's breath through his refusal of nourishment, or to other causes.

The apparent *trophic disturbances* in the cutis and subcutaneous tissues are frequently only phenomena of uncleanness or violent action (erythemas, many are panaritias, often in very insidious forms; many are cases of decubitus); sometimes they appear in consequence of medication (antipyrine, chloral, bromides).

On the other hand, it does not seem doubtful that in organic psychoses, especially in paresis, the tissues, especially the bones and the cartilage, should undergo such a change that very slight wounds or even violent movements should result in fractures or dislocations. In this connection the *blood-tumor of the ear* (othematoma) is to be mentioned especially.

The ear cartilage suffers a hyalin, later a granular, degeneration. The ears assume a bluish white color. Finally, in the aural cartilage a partly fibrillar, partly granular disintegration arises, and a liquefaction with the formation of cavities ensues.

A slight blow, a bumping of the ear, grasping the same, may start a rupture of the vessels in the wall of the cavity, which is partially newly formed, and an othematoma thereby arises; a tumor which appears especially in men, varying from the size of a hazel nut to that of a hen's egg, and finally leads to atrophy of the ear. The othematoma appears very rarely in healthy persons after a violent trauma. In the insane it arises regularly after a wound from the hand of an attendant (the left ear corresponding to the right hand of the attendant), especially in paretics, but also in epilepsy and senile dementia, very rarely in mania with fury.

Similar changes are observed in the cartilage of the nose (rhinhematoma), also in the cartilage of the ribs and of the joints.

The bones of the insane are fractured easily, since they lose their strength as their osseous substance becomes smaller and the medullary canals are widened.

Contemporaneously with this the secretion of calcareous salts in the urine is increased.

*Decubitus* (bed sores), especially in the form of *decubitus acutus* and *acutissimus* and *malum perforans*, are caused by trophic disturbances in the subcutaneous tissues.

The *decubitus* begins with an erythema on which vesicles with dark, reddish, or red-brown contents arise. These burst or dry up, the skin, laid bare, becomes infiltrated with blood, gangrenous, and puffed out. Sometimes the process of gangrene is completed in a single night (*decubitus acutissimus*). The *decubitus* depends upon an extended neuritis. The sacral region and the nates are most often affected, but bed sores develop on the elbows, heels, and shoulders. They develop with especial frequency in paretics after a paralytic attack, or a pneumonia, which confines them to their beds.

Trophic disturbances are also observed in the *hair* (abnormal increase of the growth of hair, falling out of the hair, *alopecia areata*; becoming gray prematurely, which is sometimes

unilateral), in the nails and the teeth (as rapid decay and falling out), especially present in organic brain diseases and in paresis; it is also often seen in functional psychoses (see circular insanity; I have repeatedly seen alopecia areata in paranoiacs, in whom the system of delusion was indicated by the falling out or growth of the hair).

With the trophic disturbances, see, also, bodily weight.

## XI. ANOMALIES OF THE INTERNAL ORGANS.

Diseases of the respiratory apparatus, especially *pulmonary tuberculosis*, appear in chronic psychoses favored by the loss of strength or by direct infection in the institutions. They are not to be considered as a symptom of the brain affection.

The fetid odor of the respired air is due principally to the uncleanness of the mouth, but may be called forth by refusal of nourishment, by diabetes, or by the treatment (sweetish odor in the bromide treatment, paraldehyde breath).

Changes of the *heart muscles*, hypertrophy of the left ventricle and dilatation of the right, are often found in psychoses; still oftener, premature atheroma of the arterial system (hard radial walls), serpentine temporal arteries, and accentuation of the second aortic sound of the heart.

The frequency of cardiac affections in psychoses is shown by the statement of Strecker (Virchow's Archiv, Vol. 136), according to which, in one thousand autopsies made at Dalldorf Asylum, pathological changes of the heart were found in 61.7 per cent. of the men and 42.7 per cent. of the women.

These changes are partially the consequence of those insults which called forth insanity (*e.g.*, alcoholism, kidney affections), and they represent partially the results of the influence of the brain disease on the vasomotor system; finally, they are to be considered in part as etiological factors of mental disease (see etiology).

The *pulse*, which is very often normal in the insane in respect to quality and frequency (chronic dementia), may be increased in frequency (especially in psychoses in Basedow's disease, or retarded (apoplectic attacks, brain tumors).

It is slow, with little fullness, in depressive states, especially in stupor, yet it may be accelerated in melancholia. In the maniacal states it is often accelerated and of medium fullness.

Sphygmography frequently shows in the organic psychoses, anacrotic and catacrotic heightenings, and a slow pulse; for the rest, the hopes of obtaining weighty conclusions from this method of examination have not been fulfilled.

The *pressure* of the blood is generally increased in the depressive states and in stupor, while it is decreased in maniacal excitement.

The *composition of the blood* shows only slight deviations from the normal; these are dependent upon the nourishment, otherwise not essential.

Disturbances in the *functions of the stomach and intestines* are almost regular companions of the initial stages of psychoses. They appear in loss of appetite, coated tongue, and obstruction of the bowels. In the functional psychoses a change of this condition sometimes first appears with convalescence.

The loss of appetite increases in many cases to *refusal of nourishment (sitophobia)*.

This may be complete or partial; in the latter case water or liquid nourishment is still taken.

Sitophobia may also be conditioned:—

1. By the *absence of the feeling of hunger and thirst* in maniacal states and in raving.

2. By *hallucinations and delusions*.

(a) *Melancholic* nature. The patient considers himself unworthy to eat; he cannot pay for the food. Voices threaten punishment if he eats.

(b) *Hypochondric* nature. His throat is tied, his body is full, nothing passes through his rectum, he is afraid of bursting if he takes more food into his stomach.

Both in melancholic and hypochondric insanity the *delusion of poisoning* may be the cause of his abstinence; this cause is observed very often in paretics who refuse nourishment.

(c) *Paranoic* nature. The patient will be injured by poison or filth in the food, or he must prepare himself for his divine mission by fasting.

(d) In *stupor* (see this).

3. By *thoughts of suicide*. The patient wishes to commit suicide by refusal of nourishment, since he lacks the courage or opportunity to destroy himself in another way.

In many cases the patient even takes the liquid food into his mouth, moves it around there, then spits it out again; as in mania and in delirium acutum. Often the patient eats secretly, believing himself unobserved, while he resists the pressure to induce him to eat (katatonic stupor, melancholia). Others allow, without resistance, food to be placed in their mouths and swallow it slowly (hypotonic stupor).

If the absolute refusal of food continues for some days, the expired air has a partially decayed, partially aromatic odor which depends upon its aceton contents (*Tuczek*); then the respiration becomes more superficial, the temperature of the body falls, amounting before death to only 84° to 86° F.

The weight of the body decreases rapidly the first week, about 1 to 1.5 kilogram daily. The quantity of feces and urine is diminished. The urine shows albumin, is very acid in consequence of the increase of sulphuro-phosphoric acid, and even after thirty-six hours contains considerable quantities of aceton (*Lähr*). There follows finally a fatty degeneration of the gland-epithelia of the intestine, and atrophy ensues. Total abstinence may be endured for twelve to fourteen days without permanent injury; abstinence, except from drinking water, for several weeks.

The *belching and expulsion of atmospheric air* is often observed in the insane (especially in hysteric psychoses, in the initial stages of paresis, in hypochondric psychoses, in paranoiacs, to rid themselves of poison).

*Increased appetite*, without satiety, bulimia, are observed in idiotism and in the various demented states.

The *urine* in increased excitement, especially in mania and the maniacal stages of paresis, shows absolute and relative diminution of the phosphoric acid (*Mendel*).

*Albumin* is frequently found after epileptic and the paralytic attacks of paresis; there is often *peptonuria* in paresis.

*Sugar* is seldom found (see diabetic psychoses).

*Menstruation* is frequently undisturbed during the course of chronic psychoses.

On the other hand, it is often wanting at the beginning of a psychosis in a young person, returns irregularly in the further course, or remains absent during the entire duration of the disease and first appears again during the convalescence. If an acute psychosis affects elderly persons, no anomaly of the menstruation is to be observed. In periodical psychoses menstruation is regularly undisturbed or shows only slight irregularities.

The *temperature of the body* is normal or subnormal in chronic psychoses. A rise of temperature generally points to a complication. It is always an indication for the physician to examine all the organs most carefully. It rises sometimes excessively, especially in the final stages of paresis.

Such an excessive rise of temperature appears when the psychosis follows the type of delirium acutum (which see). Great depression of the temperature of the body is observed in states of great inanition and paresis.

In acute psychoses an *inverted type* often appears (the evening temperature is lower than the morning temperature), and there is a slight abnormal difference between the temperature of the rectum and that of the armpit or of the external auditory canal (Mendel). The inverted type is especially frequent in hysteric psychoses, as is also the rapid change of temperature during the intervals of normal temperature.

The *weight of the body* almost always diminishes considerably in the initial stage of an acute psychosis; this is often so rapid that it cannot be explained solely by the existing disturbance of the gastro-intestinal tract and insufficient nutrition, and, accordingly, must be considered as a trophoneurotic symptom. The decrease generally persists during the presence of the acute psychosis, and the increase of weight, if it coincides with the diminution of the morbidly heightened symptoms, is very favorable prognostically; yet if this increase coincides with a weakening of the mental functions, it points to the beginning of dementia (see, also, circular psychosis and paresis).



## B. The Etiology of Mental Diseases.

By the Prussian census of 1895 there were 82,850 insane (43,448 men and 39,402 women). There was one insane person to each 384 inhabitants (1 to 360 among the males, 1 to 411 among the females).

The census, which included only those patients in institutions, does not give a complete picture. We should not err in reckoning at least one insane person to 300 inhabitants.

In England, on January 1, 1895, there were 38.95 insane persons in 10,000 inhabitants, consequently 1 to 250; in the Canton of Zurich, in 1888, 1 to 103; in Hungary, 1895, 1 to 640.

It is calculated that in the most populous centers there are about three places in 1000 inhabitants in institutions for the insane, and two places for the inhabitants of the country.

On the 1st of January, 1897, there were in Prussia 61,482 patients in the institutions for the insane.

[In the State of New York, on October 1, 1905, there were in the State hospitals for the insane, 11,995 men and 13,525 women, a total of 25,520.

In the private institutions under the supervision of the State Commission in Lunacy there were 367 men and 618 women, a total of 985.

In the two hospitals devoted to the insane criminals (Matteawan and Dannemora), there were 814 men and 89 women, a total of 903. The combined totals make 13,176 men and 14,232 women, 27,408 in all. The population of New York State on June 1, 1905, was 8,066,672. Hence in New York there is one insane person to 295 inhabitants.—Ed.]

According to the enumerations, mental diseases have increased, and undoubtedly this increase is for single forms, as in paresis. But these enumerations are not certain proof, nor are the constantly increasing greater proportion to the increase of population, admissions to the institutions; since the former are gradually becoming more exact, but the latter depends partially on general social conditions, also in the greater or less number of places disposable and the easier entrance into the institutions.

Epidemics, times of general mental excitement have undoubtedly an influence on the increase of the number of the insane. But it must not be forgotten that, under these conditions, often those persons who were already mentally diseased now show their mental calibre and are for the first time recognized as being insane.

The number of men mentally diseased is, as the above figures from Prussia show, greater than the number of insane women. In the institutions, also, the first exceed the latter in number (January 1, 1897: of 100 insane in Prussia, 54 were male and 46 female).

This is due in great measure to the preponderance of paresis and alcoholic insanity among men.

In New York State the female sex shows the greater inclination to insanity, in the ration of 14 to 13.

The frequency of mental disease increases constantly from the age of puberty, is greatest in men at the age of forty to forty-five years, amounts here to four to the 1000; in women about fifty years old, to almost four to the 1000.

Unmarried men and women and widows become diseased mentally relatively more frequently than those living in the married state. A comparative table of the various callings cannot be given, from want of certain and extensive data.

Undoubtedly there appears to be a greater disposition to insanity and diseases of the nervous system among the Jews.

In the great majority of cases the insanity is the product of a combination of causes, and only in a part of the intoxication psychoses and those called forth by trauma does a single etiological factor seem sufficient to produce the disease.

We distinguish:—

1. Predisposing factors.
2. Factors favoring the outbreak with an existing predisposition.
3. Direct factors.

## 1. PREDISPOSING FACTORS.

Among these the *hereditary basis* has by far the greatest significance.

[Heredity, when it is attributed to parents, is immediate; when it is traced from grandparents, having skipped the parents, it is then mediate heredity. When it has existed for many prior generations it is called cumulative heredity. It may be on the side of both parents, in which case it is called double or from convergent factors. When it is from one parent it is simply heredity, either paternal or maternal. According to Esquirol the latter is the more serious form of the two; it is also three times more common.

When hereditary insanity appears in the child at the time that it appeared in the parent, it is called homochronous. When it appears in children before it is seen in the parent, it is called anticipatory. When the hereditary taint reveals itself by a mental disorder identical with that of the parent, it is called homologous; when it is modified in passing from one generation to another, it is called dissimilar, or transformed. When it becomes more and more intensified by transmission, it is said to be progressive; if it is alleviated by a series of fortunate crossings, it is regressive.

The diagnostic value of a hereditary tendency to insanity depends largely on its degree. Thus the insanity of one parent would indicate a less degree of predisposition than that of one parent and an uncle, or still less than that of a parent and a grandparent, or of both parents. Again, the insanity of a parent and a grandparent with an uncle or an aunt in the same line may be held to indicate a stronger predisposition than even the insanity of both parents.

The significance of the insanity of parents will depend to a large extent upon the period of its onset. The insanity of a parent occurring after the birth of a child, if it arose from a cause adequate to excite it without previous predisposition, would be held, of course, as of no value in the formation of a hereditary tendency.

The insanity of relatives farther out than parents, uncles and aunts, brothers and sisters and first cousins, is not worth

anything except in corroboration of nearer and weightier facts. But the influence of other related diseases to insanity occurring in those near akin, such as eccentricity, alcoholism, epilepsy, hysteria, hypochondriasis, vicious or criminal tendencies, may be of great import.

Among nervous diseases proper, we find heredity just as strongly represented in the various neuroses as was found for the psychoses—there are transmitted in the organism certain diatheses which favor certain diseases, such as Huntington's chorea, Friedreich's disease, running through successive generations. These diseases are termed hereditary, familial, embryonic, and this succession is what is meant by the term direct heredity or organic heredity. The severity of the heritage depends very largely upon the number of members and branches affected. Here again, as in the study of psychotic heredity, we find that maternal transmissibility far exceeds the paternal.

Indirect heredity is heredity by transformation from other neuropsychic diseases and is more common but of less consequence than direct heredity. Given a neuron feebly endowed with enduring qualities, it is not improbable that any condition capable of reducing the general health may act with unusual virulence upon it. The result is a neuropathic disposition, or a nervous organization with a tendency to yield readily to undue strains and unusual influences, though of themselves of no material importance. There are propagated from parent to offspring certain diatheses which favor certain neuropathic equivalents. Thus epilepsy, melancholia, or inebriety may favor the production of hysteria, chorea, or neurasthenia in the succeeding generations; the transformation of the neuroses and toxic diatheses in propagation result often in imbecility. Thus the children of hysteric, epileptic, hypochondric, and syphilitic or alcoholic parents are liable to be imbecile. Phthisical parents also frequently beget imbecile children.

Alcoholic or morphinistic parents, parents who were in a state of drunkenness at the time of conception, or who were considerably weakened by general diseases, or who married within proscribed degrees of consanguinity, transmit to the germ *in utero* the hereditary predisposition which later on results in mental impairment.—ED.]

In many cases a series of the factors mentioned acts concertedly. The heredity becomes cumulative, the taint stamped upon the descendants works progressively and culminates in the extinction of the family.

A man of fifty years, who is an alcoholic, marries his niece, who is twenty years old. Among the antecedents epilepsy is repeatedly present. Three daughters are the fruit of the marriage, who, when I saw them, were eleven, nine, and seven years old, and all three were epilepto-idiotic.

Sometimes the hereditary basis causes such changes, even in the fetus, that the child is born incapable of mental development, or only in a limited degree (congenital idiocy); in the great majority of cases the hereditary basis forms only a predisposition for the mental disease, which arises later and which needs specially favorable momenta and direct causes for its outbreak. In many families the outbreak in the different members always occurs at a certain age.

Among the various forms whose outbreak is favored by the hereditary basis, the periodic and circular psychoses take the first place; in the great majority of cases the antecedents of these patients show a long line of mental diseases and severe central neuroses.

The hereditary basis generates, beside the predisposition to mental disease, certain peculiar natures, who, although they cannot be called mentally diseased, deviate from their youth up in their thoughts and actions from the average man, and who are therefore called inheritors, also, recently, degenerates, and who show quite often certain bodily abnormalities (see stigmata of degeneration).

These individuals may reach a great age without becoming mentally diseased, but they are placed continually during their lives as if in a balance, where they endeavor, not without difficulty, to preserve their mental equilibrium. Often enough special occurrences, misfortunes of all kinds, want and care, unhappy love, and the like, disturb that equilibrium and generate transitory, relapsing, or enduring mental diseases.

Dissimilar as are the clinical types, and however great the manifold varieties of these individuals who are not mentally

diseased but simply inheritors, they may, nevertheless, be all included in three groups:—

1. *Inheritors*, who from youth up are dissatisfied, first with everything connected with their families, then with the whole world; who declare that everything is worthless and that life is not worth the living, and that suicide is the only thing which is right. While they wish in their family circle to pose as martyrs of this life, they appear as jovial companions in good company and while away in pleasure many hours of their "horrors of existence."

They perform their tasks promptly, but in the meanwhile, if they are not guided by a firm hand, lose their energy, and then long intervals of inactivity follow.

They are almost always making hypochondric complaints, sometimes becoming exacerbated, and meanwhile the threatening spectre of mental disease plays the chief rôle, which often enough places the revolver in their hands.

2. *Inheritors* who mature mentally very early with special, often limited, endowments; who, however, in reference to their motives as well as endeavors show a decided irritability. This is expressed by the impulsiveness of their actions and by the rapid seizure of certain ideas, violent striving for their fulfillment, and again by sudden relaxation and abandonment of what they have gained by their struggles. Much is begun and little accomplished. With this, there is quite often excessive caprice, inconsideration, sometimes, also, extreme sentimentality.

In this class belong, also, those inheritors in whom the motive for an action, for a crime even, does not at all correspond to the importance and the difficulty of the action. The strength of the impulse replaces the weakness of the motive.

3. *Inheritors* who are popularly styled "originals" or "perverted geniuses," from their appearance in society, their singular habits, their oddities, their peculiar conceptions and opinions, which they exploit with consummate skill, notwithstanding the fact that such ideas are diametrically opposed to the general view.

The different varieties of these inheritors, in addition to the earlier mentioned physical marks of degeneration which are

present in greater or less numbers, show symptoms of phobias and obsessions.

*Uterine heredity.* Injuries which the mother receives during pregnancy, both those of psychic nature (fright, sorrow) and diseases of various kinds, whether they are acute or permanent (intoxications: alcohol, syphilis), may impart to the child hereditary predisposition to mental diseases.

[The frequency of heredity among the insane is variously stated by different authors, the percentage ranging from 30 to 90 per cent. In the functional psychoses it may amount to 70 per cent.

In studying the percentage of heredity as noted in the New York State hospitals for the insane<sup>1</sup> for the year 1899-1900 and since October, 1888, the following figures were obtained:—

## RECAPITULATION

Institutions	1899-1900			Since October 1, 1888		
	Heredity of whole number	Exclusive of unascertained	No heredity, exclusive of unascertained	Heredity of whole number	Exclusive of unascertained	No heredity, exclusive of unascertained
Utica S. H. . . . .	26.5	30.	70.	29.6	51.4	48.5
Willard S. H. . . . .	33.8	41.1	58.8	28.6	46.8	53.5
Hudson River S. H. . .	34.7	44.5	55.4	27.5	53.3	46.6
Middletown S. H. . . .	26.4	28.2	71.7	29.4	31.6	68.7
Buffalo S. H. . . . .	24.7	30.9	69.	21.1	31.6	68.3
Binghamton S. H. . . .	36.2	40.1	59.8	32.9	43.4	56.5
St. Lawrence S. H. . . .	35.8	52.1	47.8	33.8	50.7	49.2
Rochester S. H. . . . .	31.6	34.1	65.8	27.4	39.	60.9
Long Island S. H. . . .	17.5	33.9	69.	15.7	32.6	67.3
Manhattan S. H. East .	13.4	14.2	82.7	13.1	18.1	75.9
Manhattan S. H. West.	11.7	14.1	85.7	14.	18.6	81.5
Gowanda S. H. . . . .	28.5	36.	63.9	31.2	42.9	57.
Matteawan S. H. . . . .	15.4	76.4	23.2	15.	56.	43.9

Percentage showing heredity, 1899-1900, 25.8; since 1888, 24.5.

Percentage showing heredity, exclusive of unascertained cases, 1899-1900, 36.6; since 1888, 39.7.

Percentage showing no hereditary tendency, exclusive of unascertained cases, 1899-1900, 63.3; since 1888, 59.8.

<sup>1</sup> William C. Krauss, *American Journal of Insanity*, April, 1902.

Total number of cases admitted, 1899-1900, 6361; since 1888, 61,257.

Total number of hereditary cases, 1899-1900, 1202; since 1888, 14,526.

The hospital showing the highest percentage of heredity of the whole number for the year 1895-1896 was the Matteawan Hospital with a percentage of 57.1; for the year 1898-1899, the St. Lawrence Hospital with a percentage of 41.6; for the year 1899-1900, the Binghamton Hospital with a percentage of 36.2; and since 1888, the St. Lawrence Hospital with a percentage of 33.8.

Exclusive of the unascertained cases, the St. Lawrence Hospital showed the highest percentage for the year 1898-1899, with 56.6; for the year 1899-1900, the Matteawan Hospital with a percentage of 76.4; and since 1888, the Matteawan Hospital with a percentage of 76.4.

The lowest percentage of heredity for the year 1895-1896 was shown by the Manhattan State Hospital with a percentage of 17.3; 1898-1899, the Matteawan Hospital with a percentage of 15.3; 1899-1900, the Manhattan Hospital West, with a percentage of 11.7; and since 1888, the Manhattan Hospital East, with a percentage of 13.1.

Exclusive of the unascertained cases, the Manhattan Hospital showed the lowest percentage for the year 1898-1899; the Manhattan Hospital West, for the year 1899-1900, with a percentage of 14.1; and since 1888, the Manhattan Hospital East, with a percentage of 18.1.

These percentages vary, of course, from year to year, and the percentage of the whole number since 1888, as 39.7, is perhaps as correct an index of the true percentage as it is possible to determine.—Ed.]

Besides the hereditary basis, the environment in which the child is reared and educated undoubtedly plays an important part in the predisposition to mental diseases.

Many psychic peculiarities, many so-called "stigma hereditatis" do not arise through heredity, but from imitation in childhood, through vicious environment, or by faulty training. That the so-called "cramming" in the schools plays an essential part in generating mental diseases is not to be accepted, but the fact



should rather be considered that many parents force their slightly gifted children into the higher schools which prepare for the learned professions, and seek to keep them there by private lessons, that is, they overexert a weak organ and demand from it labors which do not correspond to its development.

Morel<sup>1</sup> has designated as a degenerate, one whose brain and nervous system are unstable, from inherited or acquired taint in the parents, who has in consequence undergone imperfectly the embryological changes to a higher type in tissues or organs, and therefore exhibits tendencies liable to extinguish the race as a type under the usual conditions of the struggle for existence. Since then the words degeneration and degenerescence have been much extended in psychiatry; "degenerescence" has been diagnosed through the presence of characteristic physical stigmata or from certain pathological psychic occurrences. Sommer is perfectly correct when he thinks that the conception of stigmata of degeneration has been so extended that at the present time there is no living man who could not be declared a degenerate on this basis.

If one conceives the hereditary basis in its broadest sense as it has been described above, it appears to me that by far the greater part of the "degenerates" are none other than those persons who show certain physical or certain mental abnormalities, or abnormalities of both sorts, in consequence of hereditary taint.

But when one speaks of an "acquired degeneration," and by that does not mean the demonstrable pathologico-anatomical degeneration of the nervous system, then every incurable mental disease is "a marked deviation from the type which may be inherited."<sup>2</sup> According to this, all incurable mental diseases may be called degeneration psychoses.

Everything that weakens the organism, and, by this, the nervous system also—the most diverse somatic diseases, a dissipated life, onanism, excesses in drinking and debauchery, abuse of tobacco, traumata of the cranium—may cause a predisposition for the later development of mental disease.

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<sup>1</sup> *Traité des dégénérescences.* Paris, 1857, p. 4.

<sup>2</sup> Möbius, *Ueber Entartung*, Bergmann, 1900.

## II. THE FACTORS FAVORING THE BREAKING OUT OF THE DISEASE WHEN THE PREDISPOSITION IS PRESENT

lie, above all, in certain ages and conditions of the organism, which offer, according to experience, a favorable basis for the development of diseases of the nervous system.

### 1. Puberty.<sup>1</sup>

Hereditary taint, often connected with anemia and onanism, also infectious diseases, previous traumata of the head, form generally the basis on which psychoses may develop at an age from twelve to twenty years, which is designated as the period of puberty. These show the most diverse forms. Most frequently they are of hysteric nature; often an epileptic psychosis develops at this period, especially where there have been epileptic seizures or where they reach the point of breaking out.

Then mania or melancholia appears, especially the hypochondric form; delirium hallucinatorium; typical paranoia seldom develops at this early stage, yet its primordial form, whose beginning reaches back to the time of childhood, generally stands out more prominently with its symptoms in the period of puberty.

While the functional psychoses of childhood are distinguished by symptoms corresponding to the limited stock of ideas in the undeveloped brain, hallucinations and delusions do not show the manifold type which they do in adults. Nevertheless, the age of puberty sets up single, determined characteristics which owe their origin to the undeveloped mental structure and to the approaching physiological change in the mental sphere. Herewith are connected the insipid contents of the delusions, the elaboration of the fairy tales read during this period, the very unsteady, frequently changing emotions according to the petulant childish nature.

The peculiar course of such psychoses appearing at the time of puberty has been designated by the names of *hebephrenia* (Kahlbaum, Hecker) and *katatonia* (Kahlbaum). Recently Aschaffenburg has contended for the identity of the two forms

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<sup>1</sup> Wille. Psychosen des Pubertätsalters. Leipzig-Wien, 1897.

and has united them under the name of *dementia præcox* (Kraepelin).

In the cases to be reckoned here one is, as a rule, confronted by persons severely tainted hereditarily who were exposed, even in childhood, to debilitating influences, especially to mental exertion not corresponding to the powers of the individual, and to faulty rearing. With these, onanism, great loss of blood at the beginning of menstruation are generally present. The disease commences almost regularly with a hypochondriac depression; the patients feel themselves incapable of labor, are backward at school, complain of sleeplessness, headaches, sometimes of palpitation of the heart, show loss of appetite, while physical examination does not disclose any disease. They distinguish themselves, contrary to their former conduct, by refractoriness, disobedience, disrespect to their parents and to their teachers. Often this stage is not recognized as pathological, the children are despised as lazy and ill-bred, often punished, or allowed by indulgent parents to do as they please. Quite often it goes on in this way for an indefinite time.

In other cases, which are preferably classified with katatonia, a manifestly pathological mental state, which is acute or subacute, appears, in the majority of cases of a hypochondriac or melancholic-hypochondriac nature, with self-accusations and delusions of transgression. Sometimes the initial delusions belong to the delusion of persecution and detraction.

In its further course a maniacal or stuporous state follows the melancholic, in both hebephrenia and katatonia; the most diverse states may also interchange irregularly. Hallucinations are present. The katatonic stupor, in which with seeming unconsciousness an arrogant temper may be suddenly expressed with all sorts of tricks and jests, has already been described. With these pathological psychic phenomena is connected a series of symptoms, which have been specially designated as katatonic. These consist of muscular tension in stereotyped postures and movements, in pathetic speeches with verbigeration and perseveration, in a passive resistance to everything which is desired of the patient, to every movement which he should make (negativism), in mutacism, in single grotesque and bizarre movements, as clapping the hands, rocking the head; further, in sudden

instinctive actions, measureless abuse, suddenly striking those about him, throwing articles about, also attempts at suicide.

Later, in a great majority of cases, this state passes quite rapidly into a condition of idiocy, and one may designate the dementia, on account of this course, as *dementia præcox*.

With the appearance of the above-mentioned phenomena in this dementia there is developed a strikingly petulant disposition, a characteristic type, with grimaces, nonsensical playing upon syllables and words. With this, the patient smiles without expression and childishly, cares for nothing, passes feces and urine involuntarily, and sometimes sits or lies for weeks in one position.

Yet in a series of cases dementia does not enter, but there is formed a certain mental weakness, which does not hinder the patient from taking up some calling or busying himself at something he has worked at before. But with this outcome there is always a certain indifference to his surroundings, a prominence of egoistic feelings, a certain limitation in regard to the object he is pursuing. The memory may meanwhile remain good.

In other cases, finally, the hebephrenic and katatonic states are cured, and the patient may remain exempt from relapses during the rest of his life.

Exceptionally this symptom-complex also appears before puberty at the age of from ten to eleven years, sometimes after the years of puberty, at twenty-five years of age and later.<sup>1</sup>

The katatonic symptoms described appear not only in the katatonic psychoses of puberty, but they also appear as transitory symptoms in older persons in the course of delirium hallucinatorium, in chronic paranoia, in the course of hysteric and epileptic psychoses, in paresis. Sometimes, also, they show themselves in the depressive stage of cyclic psychoses.

At the age of puberty, also, the mental development stops entirely, without the development of prominent pathological psychic phenomena. Nothing new is acquired, and imbecility thus supervenes.

Moreover, the cases of melancholia, mania, delirium hallu-

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<sup>1</sup> In regard to the frequency of this dementia præcox, according to my experience in Berlin, it amounts to about 2 to 3 per cent. of the insane observed.

cinatorium at puberty, which show no katatonic symptoms, offer a serious prognosis, since these diseases come on at other periods of life. They frequently incline to periodicity, or, if this is not the case, to relapse in later years, and pass into incurable dementia, if not after the first, then after the second or third relapse.

## **2. The Climacteric <sup>1</sup>**

which comes on between the forty-fifth and fiftieth year in the great majority of cases, favors by its numberless nervous disturbances the development of melancholias, hysteric psychoses with maniacal excitement, especially frequent also the most diverse forms of paranoia, often with sexual delusions, seldom mania or circular psychoses.

The psychoses generally begin before the cessation of menstruation; they show at first the oft-mentioned fear that severe diseases may follow the cessation of menstruation, and thus show a hypochondric character. Quite often there is an inclination to suicide. Sexual desire is generally heightened in women before the cessation of the menses and is diminished afterwards.

In men, also, one may speak of climacteric psychoses, which usually appear at a somewhat later age than in women, between the fifty-fifth to sixtieth years (see arteriosclerotic psychoses).

## **3. Old Age <sup>2</sup>**

which calls forth many marks of mental change in consequence of the physiological involution of the brain, favors the appearance of functional mental disease, which in the great majority of cases comes on in the form of melancholia with hypochondric or melancholic self-accusations, the delusion of poverty, great lack of energy; and with all these there is mingled vivid impulsiveness, after sleeplessness, dizziness, and headache have shown themselves as prodromes. The melancholias are frequently of a very obstinate nature, may last one and a half to two years, and even then may terminate in recovery. Attempts

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<sup>1</sup> Matusch. *Zeitschrift für Psychiatrie*, vol. xlv, 1890.

<sup>2</sup> Fuerstner. *Archiv für Psychiatrie*, vol. 20. Zingerle. *Jahrbuch für Psychiatrie*, 1899, p. 256.

at suicide, and suicide, are quite frequent in these patients. Delirium hallucinatorium and mania appear in old age. I saw a mania cured which appeared in the eightieth year. Functional paranoic states, with the delusion of persecution, jealous delusion, are rare; sometimes circular psychoses are developed.

Senile dementia founded on an organic basis (which see) appears much more frequently as a psychic disturbance in old age.

If one assumes old age in general as beginning with the eighth decennium, there are also cases of premature senescence with the corresponding mental changes which even appear in the first years of the seventh decennium. In many families the mental disorganization regularly shows itself about the sixty-fifth year of life.

#### 4. Pregnancy.<sup>1</sup>

The psychosis begins sometimes with the commencement of pregnancy and ceases afterwards. It generally appears first in the middle of pregnancy, and does not terminate with delivery, but continues into the puerperium. We especially observe choreic, uremic psychoses, melancholia, preferably in the hypochondric form, seldom mania and paranoia.

#### 5. Parturition.

sometimes calls forth a transitory disturbance of the mind, with unconsciousness, which generally arises from a hysterio-epileptic or uremic basis; but even without this it may proceed from psychic influences (illegitimate births) or by violent pain.

#### 6. Puerperium.<sup>2</sup>

The psychoses appearing in the puerperium may be caused:—

1. By a *feverish puerperal infection*: metritis, endometritis, endocarditis ulcerosa, pyemia, very seldom osteomalacia (*infec-*

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<sup>1</sup> Fürstner. Archiv für Psychiatrie, vol. 5. Mongeri. Zeitschrift für Psychiatrie, vol. 58, 1901.

<sup>2</sup> Siegenthaler. Jahrbuch für Psychiatrie, 1898. Aschaffenburg. Zeitschrift für Psychiatrie, vol. 58. Meyer. Klinische Wochenschrift, 1901, xxxi.

*tious puerperal psychoses*). These psychoses begin regularly two to four days after labor. According to the nature of the basic process, they may rapidly lead to death with phenomena of delirium acutum.

2. By *uremia* with eclampsia; *alcoholism* or *morphinism*.

3. By an *organic brain disease*, meningitis, encephalitis, capillary embolism.

4. When hysteria or epilepsy has been present, *hysteric* or *epileptic* psychoses may show themselves.

5. With a predisposition existing, especially with hereditary taint, the puerperium may favor the development of a *functional psychosis*, which far most frequently runs under the type of delirium hallucinatorium, but also as melancholia, mania, paranoia hallucinatoria acuta with transition into chronic paranoia. In youthful primiparæ sometimes a katatonic symptom-complex develops. In all these cases fever is entirely lacking during the puerperium. Such a psychosis appears preferably in primiparæ when the birth takes place at an advanced age. The commencement of the psychosis generally dates from the first days, or at least in the first week, of the puerperium.

Often such a psychosis remains solitary throughout life. Sometimes, after it is cured, the disease is repeated in the same or another form at the next delivery; in other cases it forms a point of departure for relapsing or periodic and circular psychoses; finally, a certain percentage pass into dementia (20 per cent.) after a relapse of the psychosis. The average duration of the functional puerperal psychoses which are cured amounts to five or six months.

## 7. The Period of Lactation

may call forth a psychosis (delirium hallucinatorium, melancholia, paranoia) by exhaustion or psychic influences in those predisposed. In the majority of cases this occurs in the sixth to eighth month after parturition.

### III. DIRECT CAUSES.

Among the direct causes of the psychoses, the principal ones from their importance and frequency are

#### 1. The Psychic.

They are either of sudden or gradual effect. Among the first are psychic shock, terror, the psychic trauma, sometimes with immediate effect. The psychosis begins with its cause.

Gradually sorrow, care, offended ambition, deceived or hopeless love undermine mental health.

*Psychic infection*, also, belongs to the psychic causes.

An insane person transfers his anxiety, his delusions, and his hallucinations to another predisposed individual who has been with him constantly, has nursed him and taken great interest in him.

The mental disease which arises in the second individual is called *induced insanity* (*folie à deux*, *folie communiquée*).<sup>1</sup> Usually we have here in both persons an equal and similar development of paranoic states with a religious or erotic coloring of the delusions, sometimes in the form of the querulant delusion. There are also melancholic forms, especially in religious delusions, where quite often other members of the family are infected, so that *folie à cinq*, *folie à sept*, and so on, are observed.

Many epidemics of mental disease in which the religious momenta play a principal part are to be regarded as induced psychoses, especially those of hysteric nature (delusion of witchcraft, resurrection).

Induced insanity has been observed in twins (*folie gémellaire*).<sup>2</sup> One must distinguish from induced insanity in twins those cases in which twins contemporaneously, but without being in direct contact with each other, become mentally diseased inde-

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<sup>1</sup>Schönfeldt. *Archiv für Psychiatrie*, 1894, xxvi. Riedel. *Eulenburg's Vierteljahrschrift*, 1897. Meyer. *Archiv für Psychiatrie*, 1901, xxxiv.

<sup>2</sup>Herfeldt. *Zeitschrift für Psychiatrie*, vol. 57. Soukhanoff *Ann. Méd. psych.*, 1900, Sept.-Oct.



pendently of each other, perhaps at different places, and quite often of the same form of psychosis.

Induced insanity affects women especially. The mental disease is transferred from mother to daughter, or from daughter to mother, or, very frequently, from sister to sister. Sometimes one sees the insanity of the husband transferred to the wife, and vice versa.

Quite often the induced person is not only predisposed, but also more or less imbecile.

Induced insanity must be distinguished from *transformed* insanity.<sup>1</sup> Here one mentally diseased transfers his delusions to another insane person, and modifies thereby the typical picture of the latter without bringing forth any considerable change in his condition.

## 2. The Somatic Causes.

(a) The trauma (see psychoses by trauma).

(b) *Diseases of the nervous system.* So far as hysteria, epilepsy, and chorea are considered causes of psychoses, they will be discussed in the chapters on special psychiatry.

In this place we shall only accentuate the facts that neuralgias of the most diverse kind may call forth psychoses in the predisposed by their severe pain, the lack of rest at night, indirectly by the narcotics and hypnotics which are used to relieve them.

In similar manner, in relatively few cases severe migraines lead to mental disturbances. Sometimes a state of mental disturbance (obscurity of the consciousness, deliria, hallucinations) appears as an equivalent or as a posthemiparic attack corresponding to the observations in epilepsy.

See the chapters on special psychiatry for the psychoses arising in consequence of organic diseases of the brain.

(c) *Diseases of the other internal organs.* *Tuberculosis*, especially tuberculosis of the lungs, sometimes generates mental disturbance, as a rule in the form of melancholia, especially in the period of puberty.

Often during the psychosis the progress of the lung disease

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<sup>1</sup> Finkelstein. *Jahrbuch für Psychiatrie*, vol. 16.

is checked, but it makes more rapid advances after the termination of the psychosis.

Organic psychoses may condition tuberculosis by chronic meningitis, solitary tubercles, and tubercular brain abscesses.

*Cardiac diseases*, with the predisposed, sometimes are followed by psychoses.<sup>1</sup>

The psychoses generally follow the type of mania or of delirium hallucinatorium, seldom as melancholia.

*Diseases of the gastro-enteric tract.*<sup>2</sup> The anamnesia shows in a great number of cases of mental diseases disturbances of the digestion, generally connected with constipation.

In no small number of cases the disturbance is conditioned by an affection of the nervous system. This is, like the mental disease, a symptom of the existing affection of the central nervous system.

In other cases the phenomena conditioned by the disturbances of digestion accelerate the breaking out of the mental disease or hasten its course.

In a third series of cases intestinal disturbances, which have arisen independently of the nervous system, act physically or chemically in the generation of the psychoses.

The replete stomach, the distension of the transverse colon pushes up the diaphragm, inhibits the activity of the heart, calls forth anxiety, fear of heart disease, apoplectic attacks, sleeplessness, and becomes thereby an occasion for hypochondric mental disease. With these a hyperacidity or a hypoacidity of the gastric juice may be present; generally there are belching, borborygmus, and obstinate obstruction of the bowels.

Through chemical agencies the poisons generated and absorbed in the intestine lead to the autointoxication psychoses (which see).

Autointoxication through affections of the liver and kidneys undoubtedly plays an important part also in the development of mental diseases.

How far this is the case in disease of the female sexual organs, especially of the ovaries, must remain undecided; more-

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<sup>1</sup> Fischer. *Zeitschrift für Psychiatrie*, vol. 54, p. 1048; 1898.

<sup>2</sup> Herzog. *Archiv für Psychiatrie*, 1899, xxxi, 170.

over, these organs, as in hysteria, have lost a great part of their etiological significance in the production of the psychoses.<sup>1</sup> Impaired development of these organs, as that of the testicles or the penis, or hermaphroditism in man, and the impotence caused by them may lead psychically to the generation of psychosis (generally in the form of hypochondric melancholia or paranoia). The psychoses called forth by disease of the thyroid gland will be separately treated. The same is true of the mental diseases generated

(d) By *infectious diseases* and

(e) By *poisons* (alcohol, morphine, cocaine).

There remains only syphilis to be considered.

*Syphilis* may call forth mental disease when:<sup>2</sup>

1. The predisposed infected person, on account of the infection, reproaches his manner of life and becomes melancholy, or, in his anxious excitement, is afraid of all the horrors of secondary and tertiary syphilis (*hypochondric melancholia with syphilophobia*).

2. An *acute infection psychosis* is generated by the syphilitic poison, generally with severe headache and obscurity of the consciousness, quite often with contemporaneous rise of temperature.

3. An organic syphilitic psychosis arises (which see).

Syphilophobia is often observed, also, without previous syphilis in hypochondric states, in the phobia of touch.

Finally, psychoses sometimes arise through long-continued or frequently repeated tiresome anti-syphilitic cures.

### 3. The Mixed Causes—that is, Those Acting Psychically and Somatically.

Among these *onanism*, *sexual excesses*, and a generally dissolute life may be emphasized.

War, with its mentally exhilarating and physically debilitating influences, together with a general insufficiency of nutrition, also belongs here.

The same is also true of those *shipwrecked*.

<sup>1</sup> Hegar. Zeitschrift für Psychiatrie, 1901, lviii, 357.

<sup>2</sup> Jolly. Klinische Wochenschrift, 1901.

A large percentage of mental diseases originate in *prison*,<sup>1</sup> especially among those isolated and condemned to solitary confinement.

In a goodly number of these cases it concerns men who were already mentally diseased at the time of their sentence, and whose mental disease, becoming worse under the injurious influences of the prison, breaks out with symptoms which are clear even for laymen.

*Prison psychoses* are partly acute; they run their course with marked hallucinations of hearing and of touch, like delirium tremens or delirium hallucinatum, or, also, under the type of acute hallucinatory paranoia (in these cases regularly with delusions of persecution, anxious excitement, seldom as melancholias or hypochondric melancholias), partly with a chronic course like simple chronic paranoia or hallucinatory paranoia, as chronic alcoholism, as epileptic mental disturbances, and as paresis.

So far as imprisonment or isolation is found to be the cause of a psychosis, it is generally soon cured by release or by commitment to an institution for the insane.

Recently we have had in Germany psychoses which were called forth by residence in the tropics (*tropical insanity*). This applies also to the American soldiers sent to the Philippine Islands.

The question is here of physical over-exertion, mental excitement, called forth by the constant threatening of wild people, malaria, and an excessive use, especially for the tropics, of alcohol, nicotine, even of tea, often contemporaneous with insufficient nourishment.

The clinical types fall under those of delirium hallucinatum, acute or chronic alcoholism, seldom under those of melancholia or paranoia.

In many of these patients a predisposition, through family inheritance, can be shown.

Some authors, finally, have considered *exhaustion* as a special etiological factor for the development of psychoses and have spoken of *exhaustion psychoses*.<sup>2</sup>

<sup>1</sup> Rüdín. *Zeitschrift für Psychiatrie*, 1901, lviii, 447. Näcke. *Unterbringung geisteskranker Verbrecher*. Halle, 1902.

<sup>2</sup> Räcké, *Zeitschrift für Psychiatrie*, 1900, lvii.

That exhaustion or inanition may generate psychoses is not at all doubtful, and many of the above-mentioned psychoses act singly or together by exhaustion.

But since a definite clinical type of exhaustion psychoses is lacking, as also a characteristic anatomo-pathological lesion, it is advisable, then, in concrete cases to refer the etiological designation of the psychosis to that factor which has brought on the exhaustion.

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### **C. The Outbreak, Course, Duration, Result of Psychoses.**

The outbreak of a *psychosis* may be acute, following its cause immediately or almost immediately.

This is observed in traumata of the head or in psychic traumata, as a consequence of epileptic seizures, in the most diverse intoxications, the delirium of fever, and also in the psychoses following infectious diseases.

In the great majority of cases the outbreak is gradual.

Sleeplessness, digestive disturbances, feeling of depression, change of the temper without motive, and irritation form the transition from health to disease.

### **COURSE AND DURATION OF PSYCHOSES.**

There are psychic disturbances which run their course in the fraction of an hour or in a few hours; these are designated as

#### **1. Transitory Mental Disturbances.**

These may rise:—

1. By a violent emotion in hereditarily predisposed individuals or under the influence of great bodily pain (*e.g.*, trigeminal

neuralgia), under the combined action of the emotions and the pains of parturition, mostly with greater or less obscuring of the consciousness, and raving excitement.

2. By epilepsy and hysteria as equivalents or as pre- or post-epileptic or hysteric insanity.

The majority of cases which have been described as *mania transitoria* were epileptic equivalents.

3. In consequence of intoxications, especially frequent from alcohol (see alcoholism), also from carbon dioxide and illuminating gas.

4. In organic brain diseases, brain tumors, brain apoplexies.

5. As heightening of a fever delirium.

6. With the misconception of *lasting* melancholic states there are rapid transitory exacerbations of the same (*raptus melancholicus*) which are understood as mania.

A mania of such short duration as *mania transitoria* does not exist.

## 2. Acute Mental Disturbances.

Under the name of "*delirium acutum*" Brierre de Boismont first described, in 1845, a mental disease whose symptoms and course appeared in the following manner: After a short prodromal stage with headaches and gastric disturbances, there suddenly appeared, and generally very violently, a delirium with great disturbance of the consciousness, which was at first more of an anxious nature, but which afterwards became absolutely incoherent, with interminable talking. The taking of nourishment was limited to the minimum, the weight of the body rapidly diminished, the dry lips and the tongue were covered with fuliginous fur; speech was difficult, jerky, and finally unintelligible. General trembling of the muscles followed the violent motor and raving impulse; finally, clonic and tonic spasms appeared. From the commencement the pulse was generally accelerated (100 to 110), the temperature showed a continuous fever (100°-102° F.). Towards the exitus letalis the temperature rose to 105° F. and over. The patient died in mild delirium and general collapse.

The time from the beginning of the disease to the end was one to three weeks. Recovery is noticed in very few cases.

Acute delirium is a symptom-complex which may appear under very different conditions.<sup>1</sup>

1. In a violent course of paresis (the galloping form).

2. In the most diverse organic brain diseases: meningitis, acute hemorrhagic encephalitis.

3. In certain infectious diseases (puerperal infections).

4. In febrile delirium tremens.

5. In insane patients who have become septicemic in consequence of wounds, especially in maniacal raving.

6. By an autointoxication whose exact conditions have so far been wholly unknown.

The bacterial findings in acute delirium (Bianchi and Pizzino) require further researches, especially in regard to their specificity.

The hysteric and epileptic, like the intoxication psychoses, often run an acute course, if they do not appear transitorily.

A *subacute* course distinguishes the *curable functional* psychoses.

The onset, like the decline, is not, as a rule, a regular one, but accompanied with numerous exacerbations and remissions; that is, the disease does not progress uninterruptedly to its climax, but poor days and hours interchange with good ones, and thus the improvement continues, after the crisis of the disease is passed, with numerous variations, before complete recovery is eventually reached.

The duration of such subacute psychoses amounts in the average from eight to ten months.

The above-mentioned variations may lead, in the course of the disease, to a long period of remission, lasting days or weeks, of the symptoms; there may even be transitorily a perfect freedom from delusions, an intermission with complete consciousness (delirium hallucinatorium, mania). Such a one often appears if the disease consists of two phases, melancholic and maniacal, while a remission or intermission is intercalated between them.<sup>2</sup>

<sup>1</sup> Binswanger and Berger. Archiv für Psychiatrie, 1901, xxxiv, 114. Carrier and Martin. Revue neurologique, 1901, 770.

<sup>2</sup> The question is not of a legal "lucid interval," but of a short transitory remission or intermission in such cases. The disease continues, even when the symptoms do not show themselves externally in the same way.

### 3. The Chronic Mental Disturbances

develop from the acute or subacute (secondary chronic psychoses) or are from the very outset of a chronic nature, as idiotism, chronic paranoia, organic mental diseases.

They may manifest a stationary type during their entire existence, frequently as secondary dementia; they may change many times in their appearance, like the katatonic forms; they may go on *progressively*, like the organic mental diseases, especially paresis.

### 4. The Periodically Progressive Mental Diseases

manifest themselves:<sup>1</sup>

1. As periodical mania.
2. As periodical melancholia.
3. As periodical delirium hallucinatorium.
4. As periodical paranoia.
5. As circular psychosis (see the chapters on special psychiatry).

Further, certain periodically-appearing physiological processes, like menstruation, and somatic diseases running periodical courses, like malaria, condition mental diseases also appearing periodically.

In the so-called menstrual psychoses,<sup>2</sup> which generally appear premenstrually, seldom postmenstrually, one as a rule deals with hysteric, hysterio-epileptic, or epileptic individuals, in whom menstruation, often also dysmenorrhea, gives the accidental cause for the elaboration of a chronic nervous disease into an acute psychosis.

Sometimes these periodical disturbances appear in girls in whom menstruation is disturbed or delayed (*psychosis of menstrual development*, Friedmann), and vanish with the appearance or regulation of the menstruation; as, on the other hand, cases of periodical insanity come on with the menstrual type in the climacteric after the disappearance of menstruation.

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<sup>1</sup> Die periodischen Geistesstörungen, Jena, 1901.

<sup>2</sup> Krafft-Ebing. Psychosis menstrualis. Stuttgart, 1902.



The form of menstrual psychosis varies greatly, it is as varied as the type of the hysteric psychosis; its duration extends, as a rule, for a few days, but sometimes may continue for weeks.

Epileptic psychoses may also appear periodically, mostly with very great confusion and abundant hallucinations, and, further, certain forms of alcoholism (see dipsomania).

Regarding the *course* of psychoses, the individual mental balance, the general physical condition, the age in which the psychosis appears, but more especially a considerable hereditary taint, are of special importance.

Heredity, on one hand, may cause the disease to appear not very complex by the innumerable remissions (often in paresis), or by the imperfect development of the characteristic symptoms of the type of the psychosis. On the other hand, one sees, especially in functional psychoses, that, with considerable hereditary taint, the course is very slow and that symptoms of apparent mental weakness may deceptively show incurability, while the further course results in recovery. One may say, in general, that a considerable hereditary taint, especially in functional psychoses, blurs the typical pictures.

Formerly a great and favorable influence upon chronic psychoses of some duration was ascribed to the first appearance, as well as to the cessation, of menstruation.

The course anticipates this hope only very exceptionally. The first appearance of menstruation in such cases is, as a rule, without any importance in the course of the disease, but the climacteric is wont to make existing chronic psychoses worse, to accelerate the weakening of the mental powers, or to add to the existing symptoms new hallucinations and delusions belonging to the climacteric.

In acute and subacute psychoses the appearance of menstruation is generally connected with great excitement, as even normal women are frequently very irritable at the time of the menses.

Febrile diseases which appear during the existence of the psychoses sometimes influence the course of the mental disease favorably. Typhoid fever and smallpox should be especially mentioned in this connection.

Alcoholism, morphinism, and other chronic intoxications generally make the course more difficult, by adding their own symptoms to those of the psychosis which is independent of them.

## RESULTS OF THE PSYCHOSES.

### 1. *Recovery.*

The recovery of a person mentally diseased may take place *suddenly*. This often happens with epileptics and alcoholists (delirium tremens), very rarely in the functional curable psychoses, then, as a rule, in individuals heavily tainted hereditarily and with an inclination to sudden relapses.

I saw a melancholiac recover suddenly after the first injection of morphine; a hypochondriac melancholiac, immediately after the placing of a pessary.

The recovery may follow *gradually* with many variations—the usual case—or with constant gradual diminution of the pathological phenomena.

The duration of the different psychoses until recovery will be discussed in the chapters on special psychiatry. We will only remark here that by far the greater number of recoveries take place in the first year of the disease, and that after two years duration recovery can be considered only as a very rare, exceptional result; however, late recoveries may take place after three, even after twenty years.<sup>1</sup> These late recoveries appear chiefly in depressive mental disturbances, sometimes during the climacteric.

The recovery often takes place after the original form of disease has passed into another form, especially after a melancholia has ended in a mania, seldom when a mania has ended in a melancholia (manic-depressive insanity).

### 2. *Incomplete recovery.*

Recoveries with defects (Neumann).

Although the patient externally makes a thoroughly normal impression and resumes his business as before, there remain

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<sup>1</sup> Kreuser. Spätgenesungen bei Geisteskrankheiten. Zeitschrift für Psychiatrie, 1900, lvi, 771.

single residuary hallucinations and delusions which persist for the remainder of his life, or may form the nucleus of insanity by relapses. Generally in recoveries with defects, although the delusions and sense deceptions have disappeared completely after the subacute psychosis, the patient is not the same person he was before; he has not acquired fully his former energy and application; he does not fit well into the world around him; a certain insecurity pervades his actions.

### 3. *Incurability.*

The incurability of a psychosis may be *primary*, as in the organic psychoses, idiocy, chronic paranoia; or it may be *secondary*, when a primary curable psychosis is transformed into secondary mental weakness—dementia (terminal dementia).

The degree of the terminal dementia and the external form in which it appears may be very different, and in these one may distinguish:—

#### (a) *Secondary paranoia.*<sup>1</sup>

A form of mental disturbance proceeds from delirium hallucinatorium, mania, or melancholia, which is distinguished by paranoic delusions, but shows contemporaneously a strange mental obliquity of primary paranoia in its first stages.

In the great majority of cases this secondary paranoia finally becomes complete dementia.

#### (b) *Acquired imbecility.*

Delusions and sense deceptions are not present, or so faded that they do not appear. But the man has become another.

His capability of forming judgments is diminished, criticism is not prompt but defective, the memory is generally weakened, and the sense of propriety has not its former power.

With the diminished capability of execution is connected a diminished capability of resistance against the changes of momentary feelings or impulses to action. Such mentally weak persons may, with suitable guidance (but not without this), still work very well, may even earn their livelihood.

#### (c) *Agitated dementia, demented confusion.*

Delusions and hallucinations are transposed from the primary psychosis, but they are weakened, not accompanied by

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<sup>1</sup> Mönkmöller. *Zeitschrift für Psychiatrie*, 1901, vol. lviii, p. 669.

vivid feelings or emotions. They are no longer connected; only single words point to them, and one may often recognize the preceding functional psychosis of confusion by the frequent repetition of such words and by the behavior of the patient.

The former melancholiac stands in silence and bites his finger nails; the former maniac shows himself influenced still, at intervals, by raving; the quondam paranoiac is querulous, snappish, or broods gloomily. Many appear with all kinds of orders, epaulettes, in peculiarly grotesque apparel.

(d) *Apathetic dementia.*

Mental power is reduced to a minimum, only a vegetative life exists in the most developed form of this dementia. Memory is wanting; only harsh sense stimuli, the view of food and drink, are still accompanied by feelings.

Finally, there follows a paralysis of motility and of the reflexes. The patient must be waited upon like a child in its first year.

In this terminal dementia one often finds dilated, sometimes very mobile pupils, or the pupillary reflex sluggish to the impression of light. The tongue often trembles, also shows fibrillary twitchings.

The power of the extremities is generally lessened, often a certain hypotonia of the articulations exists. The tendon reflexes are generally prompt.

The question why a functional psychosis ends in recovery in one case, while in the other it passes into incurable dementia, cannot be answered at this time.

Experience teaches that those functional psychoses especially those appearing in the age of puberty and in which there is a considerable hereditary taint, frequently and quite rapidly pass into dementia (dementia præcox, in which Kräpelin distinguishes a hebephrenic, a katatonic, and a paranoic form).

The pathological types, just described, of weakmindedness, of agitated dementia, and of apathetic idiocy may gradually develop, one from the other; imbecility may pass into the agitated form of dementia, then into apathetic idiocy. But any one of the above-mentioned forms—and this happens in the majority of cases—may develop immediately from the primary psychosis, and this form may remain, or a great agitation, if

only transitorily, may appear in the imbeciles or those apathetically demented.

Secondary or terminal dementia may arise:—

(a) From a functional psychosis (terminal dementia in the narrower sense).

(b) From epileptic, hysteric, or choreic psychosis (neuropathic dementia).

(c) From an intoxication psychosis (toxic dementia).

#### 4. *Death*.<sup>1</sup>

This may be conditioned:—

1. In *organic psychoses*, by apoplectic and epileptic seizures, by paralysis of the vagus nerve (paralysis of the heart, hypostatic pneumonia).

2. By *exhaustion*, whether it is caused by high continual fever, or by scanty or insufficient nourishment (acute delirium, melancholia).

3. By *traumata*, whose cause, as well as their unfavorable course, may lie in the psychosis itself (decubitus, cystitis after catheterization, septicemia in consequence of injury, gangrene). The trauma may also be produced by an accident, as, *e.g.*, when the bewildered one goes through a window which he had thought a door, jumps over the railing of a bridge into the river because he thinks a person is there who wishes to bar his way (alcoholism, epilepsy). In epileptics death sometimes ensues by suffocation from the position of the body during the seizure.

4. By *accidental internal diseases*, among which tuberculosis is by far the most frequent; yet it has as yet not been proved that pulmonary tuberculosis is much more frequent among the insane than among those mentally normal.

#### 5. By suicide.<sup>2</sup>

Attempts at suicide, and suicide, may take place among the insane in very different ways:—

(a) Dissatisfaction with himself and the world, general pessimism, or, in emotion, from motives which do not correspond to the enormity of the deed (in inheritors, in imbeciles).

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<sup>1</sup> Heimann. Die Todesursachen der Geisteskranken. Zeitschrift für Psychiatrie, 1900, lvii.

<sup>2</sup> Kuré. Jahrbuch für Psychiatrie, 1898, p. 271.

Here also belongs a considerable number of the suicides in children, who, *e.g.*, take their life from fear of punishment. In chronic alcoholists the consciousness of inferiority and the incapability of saving themselves from their distress often lead to suicide.

(b) *Hypochondric delusions* quite often lead to suicide, thus the fear of insanity, especially the fear of "softening of the brain," of severe bodily pain (in hypochondria, in hypochondric melancholia, in the initial stage of paresis, in rudimentary paranoia in which the torment of impellent ideas and the fear of insanity drives to suicide). Suicide in hypochondria sexualis is especially frequent; the patient is afraid of becoming impotent or syphilitic, or both; a secret betrothal or the wedding drawing near may accelerate the carrying out of the suicidal tendency.

(c) Suicide takes place on account of *melancholic delusions*, where the patients think that they have lost all feeling for their friends and relatives, even the joy of their whole life; from this they think they are useless in the world, or that they have committed some crime which can be atoned for only by death; that they can avoid the disgrace which they have brought upon their families and the punishments which they expect, only by death.

In hypochondric melancholia sometimes such a torment exists, such a fear of death, that the patient prefers death itself to the permanent torture.

Finally, on the basis of melancholia, a suddenly heightened attack of anxiety may bring on suicide (*raptus melancholicus*). While the patient is delaying, appears entirely uncertain, a sudden heightening of emotion, vivid hallucinations, or some external cause drives him to the deed.

Grounded on a melancholic basis, suicide appears in melancholia, in the depressive phases of delirium hallucinatorium, in alcoholism, in paresis, in senile dementia, but seldom in the circular psychoses.

(d) From *paranoic* delusions suicide develops in the following manner:—

The patient will no longer bear the persecutions from which he is suffering, or he wishes to burden his persecutors with a special responsibility for his death. In this way suicide may

take place in imbeciles, in paranoia, in paranoic delusions of paresis, and in senile dementia.

(e) *Megalomaniacal ideas* may be the cause of an unpremeditated suicide, when the patient wishes to show that he can fly, that he is immortal, and, accordingly, can do things which endanger his life.

(f) Hallucinations, especially *auditory hallucinations*, may often lead to suicide. These command the patient to destroy himself; they arise on a melancholic or paranoic basis. One of my melancholic patients drowned herself because in her hallucinations she had seen her husband drown and heard him call for help; she wished to help him.

(g) *Twilight states*, in which the memory dwells on the concealed ideas of suicide; they may drive to accomplishment of the act, with want of consideration (epilepsy, alcoholism).

The manner of attempts at suicide sometimes allows us to recognize the type of the insanity underlying the action.

The melancholiac is distinguished by the obstinacy of his attempts at self-destruction. Sometimes these dominate the type of the disease so that some have spoken of a *suicidal melancholia*. The violence of the means appears quite often. A melancholiac who had been dismissed from the asylum uncured, crept in the evening into an oven which he knew would be heated in the morning and shot himself in this situation. Others set fire to their beds and clothing, which they have previously saturated with petroleum. Quite often the mutilation of an organ or member is connected with the suicidal attempt. An aged melancholic clergyman tried to destroy himself by cutting off his penis, with which, according to his views, he had transgressed fifty years before by onanism. A female patient first stuck her tongue into an open fire because she had blasphemed God with it, then cast herself into the fire. A young man cut off his right hand on the bank of a river (he thought he had committed perjury with it), then he drowned himself.

From among the melancholiacs are generally recruited those suicides who first kill their wives and children to preserve them from the misery of the world.

Paranoiacs commit suicide with regard to all external circumstances, like a coldly-considerate healthy person. Hystericals

frequently threaten self-destruction, generally on account of paranoic ideas: People do not value them enough, they are not believed to be sick. The attempt, as a rule, is not made in earnest, but one must not reckon too much that it will not succeed. The death which was not desired may, through carelessness in the suicidal attempt, really occur.

The suicide of paretics is generally distinguished by mental weakness, by the lack of energy, in the carrying out of the attempt, and the patient stops in the midst of the execution. One of my paretics wished to poison himself by carbon dioxide, but raised the window because, as he said afterward, he feared that the vapor would affect his lungs, and he was disposed to catarrh.

Another paretic, who wished to take his life, took off his clothes on the bank of a river, went into the water up to his knees, but then returned because he "had suffered from rheumatism, and this might easily come back."

Sometimes the insane attempt to kill themselves by refusing to take nourishment (melancholia, paranoia); sometimes they place or force foreign objects into the several cavities of their own bodies (nose, stomach, bladder, rectum, vagina); or they accuse themselves of crimes which are punishable by death, and hope to be executed (*indirect suicide*). In general, insane women have a greater inclination to suicide than insane men.

In many families self-murder is uncommonly frequent; sometimes it occurs with the majority of the members of the same family at a specified age, as with a hereditary disease.

The greatest number of suicides occur in summer, especially in the month of June.

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## D. Pathological Anatomy of Mental Diseases.

1. A series of psychoses do not reveal at autopsy any pathological finding along any definite direction. There are often conditions present, like hyperemia, anemia, embolism, or thrombosis, which are intimately connected with the cause of death or with the agony, but not with the psychosis.



2. In another series of cases macroscopic changes appear in the membranes: pachymeningitis, thickening or attenuation of the dura, hematoma of the dura, adhesion of the dura to the calvarium (present in about 50 per cent. of all cases of psychoses), paccchionian granulations, thickening and opacities, also milky turbidity of the arachnoid, especially at the convexity and along the sinus longitudinalis superior, and edema of the arachnoid. But these are as little characteristic of a psychic disease as the changes in the nerve cells, which singly or in numbers show a disintegration of the chromatic substance (chromatolysis).

That all these changes do not prove a psychic disease which has been present during life is shown by the same or similar changes which are also found in patients who never had a psychic disease.

3. In the great majority of cases of idiocy, as commonly in organic mental diseases, there are abnormalities of the brain and its membranes, which will be more exactly described under those diseases.

In *terminal dementia*, there is, along with chronic inflammatory processes of the meninges, in the majority of cases, a diminution in the weight of the brain, averaging 200 grams, whereat the bulk of the loss in weight does not fall upon the frontal lobes of the brain, as in paresis (Parchappe and Bucknill). The microscopic examination, generally, but not constantly, shows deposits of fat and pigment in the ganglion cells, considerable deposits of nuclei in the vascular walls, and dilatation of the capillaries, which are usually void of blood.

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## E. The Diagnosis of Mental Diseases.

To determine whether a person is mentally diseased is easy if hallucinations with the firm belief in the objective reality of the hallucinated sense perceptions are produced, or if the delusions may be recognized as monstrous by their content, or if the characteristic physical symptoms, as in paresis, make it positive

that certain, although not so very striking symptoms of psychic abnormalities confirm the existence of a mental disease.

Further, the thermometer will easily distinguish the deliria of one in fever from the garrulity of one insane.

The diagnosis may be doubtful and difficult whether the person is insane or not:—

1. In imbeciles (which see).
2. In secondary states of mental weakness.
3. In dissimulation of the sense deceptions and delusions actually present.

If there is an anamnesia sufficient and free of excuses, the diagnosis will be easy if one presents the facts of the anamnesia to the one who is being examined, and ascertains from his behavior towards the accusing momenta whether the symptoms which seem pathological are still present.

Without a sufficient and reliable anamnesia, in many cases, an observation in an institution or oft-repeated examinations cannot be avoided.

For the diagnosis of the *special* forms of mental disease, see the special chapters.

The answer to the question, whether any one who has been insane may be regarded as cured,<sup>1</sup> demands the following considerations:—

The person who has recovered speaks calmly and dispassionately of his disease, although he may seek to excuse this or that in his behavior during the existence of the disease, or he describes it as not unjustifiable and as called forth by certain actual occurrences in his surroundings. His former aspirations have returned, his demeanor in his family circle shows him to be himself again.

The approach of recovery is generally announced by the increase of the body weight and by the contemporaneous diminution of the pathological psychic symptoms.

The proof that the patient has wholly recovered is first evidenced when he takes up and fulfills the duties of his former life in the usual manner.

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<sup>1</sup> Heilbronner. Krankheitseinsicht. Zeitschrift für Psychiatrie, 1901, vol. 58.

The dictum of Willis, that "no one can be regarded as cured till he voluntarily confesses his insanity," cannot be accepted in this categorical form. There are sporadic cases which, in spite of a limited residual insanity, may undoubtedly be considered cured. It is self-evident in this respect that this vestige of abnormal ideas must have absolutely no influence upon the patient's actions. That this is not really the case must be ascertained by long observation of the person in a free condition amid his former surroundings.

Mental disease is sometimes simulated, especially to aid litigation, in order to recover damages from another on account of an injury said to have been sustained through another's negligence, to have a marriage declared void, as a criminal defense, or for the purpose of securing release from confinement.

The forms of psychic disturbances which are especially studied in this respect are: 1, raving; 2, imbecility; 3, stupor; 4, epileptic insanity.

Raving and stupor are very difficult to simulate. The healthy person is not able to carry on violent actions as long as the raving maniac without cessation and without food and drink, or to lie for days and nights without motion like one in stupor. The symptoms in the vascular system, the peculiar katatonic or hypotonic physical symptoms, are also absent in simulated stupor. Perhaps it would be difficult for even a psychiatrist to simulate a particular type of psychic disease; he would easily commit errors in the rôle. A simulated epileptic attack would be recognized by the normal behavior of the pupils and the fact that the pretending patient shows no spasms in the masseters, and does not bite the tongue, the absence of participation of the muscles of respiration and the consequent blueness of the face.

Imbecility may be simulated most easily. But here the exaggeration,<sup>1</sup> the incoherence of the answers, the cunning look,

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<sup>1</sup> A man accused of fraud asserted that he did not know his age, the year, nor how to count money. I took from the portemonnaie, which he had handed me, a mark; he said that he did not know how much it was, then I showed him a five-pfennig piece which I had taken from my pocket-book, but he would not recognize this; I then put it in his portemonnaie and the mark in mine and started to go away with my colleagues. As I was near the door, he called to me, saying that I had taken a double amount from his portemonnaie and put into mine. He was soon forced to acknowledge his simulation, as I was able to secure

and the expression of the countenance, betraying the effort in simulation as opposed to the vacant expression of imbeciles, will assure the diagnosis.

With this, the malingerer is generally anxious to show his pervertedness, while in the diseased it often costs much trouble to discover the delusions.

Observations by good attendants will generally cast aside every doubt, especially when it can be shown that the person, when he thinks he is not watched, has an entirely different bearing than at the time of observation, or of medical examination; that he sleeps well, eats, drinks, although he refuses food if he thinks that he is observed.

Sometimes pieces of writing whose contents are diametrically opposed to his assumed demeanor, betray the simulation.

Simulation of insanity, where it extends over a considerable period of time, weeks or months, is very rare. The greater the experience of the physician, the more rarely will he have occasion to diagnose simulation. The would-be pretender is more apt to practice dissimulation in the presence of an inexperienced practitioner.

*Insane persons* often simulate certain symptoms "in fun," or to irritate the physicians or other officials, or to attain a favorable personal advantage. Since these insane persons have generally a certain knowledge of psychiatry which they have picked up in the asylum, it is often not so easy to recognize the simulated symptoms.

The attempt to dissimulate a mental disease which exists, is undoubtedly more common than that of simulating one which does not exist; in the majority of cases it is with the object of avoiding a threatened or obnoxious guardianship or to get rid of one which already exists.

But such *dissimulations* appear also in the criminal courts in order to avoid being put into an institution, or to undergo a punishment limited in time, since confinement in the institutions is indeterminate.

Gnauk's patient, who was punished for *lèse majesté* and

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pieces of writing from his desk, written in the last few days, in which he had written exactly, with the dates, everything which he had received or paid out.

had finished his term of punishment, declared afterwards that he had said nothing to the judges of the voices which had driven him to that crime, since people would not have believed him, and if they had believed him he would have been put into an institution and would not have been released again. Hence he preferred the sentence.

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## F. The Prognosis of Mental Diseases.

This will be according to the form in which the mental disease appears. It is unfavorable in idiocy, in organic mental diseases except the luetic, in the chronic forms of paranoia, very doubtful in epileptic psychoses, especially in regard to relapses, and in some of the intoxication psychoses. It seems to be favorable in delirium hallucinatorium, mania, melancholia, acute dementia, doubtful in acute paranoia, the hysteric psychoses, and some of the intoxication psychoses. The prognosis becomes more unfavorable, even if it was favorable previously, if the psychosis has lasted a year without definite signs of improvement.

In all cases where recovery has followed, the question arises prognostically whether relapses are to be expected or whether the disease will run a periodical course.

Relapses are frequent and especially to be feared when a considerable hereditary taint gives a predisposing influence. In such cases a new insult may easily bring on new diseases.

The relapse, which may appear after years, even decades, may come on in the same form as the first disease, consequently a melancholia, mania, a delirium hallucinatorium may appear in the second attack as in the first, sometimes even after decades, with exactly the same delusions and sense deceptions; in other cases the second attack is a mania, while the first was melancholia, or inversely.

The relapses have, especially in inheritors, a less favorable

prognosis than the primary disease, yet even here there may be recovery after repeated relapses.

A *periodical* form is to be feared if the primary attack appears in the period of youth of one strongly tainted hereditarily, especially if the attack runs along with considerable remissions and is speedily cured.

The diagnosis of the periodical and the circular form can only be made certain by the course of the disease.

Further, it is important prognostically to declare whether a primary psychosis after a certain duration will pass into terminal dementia or not.

If the affection which distinguished the primary psychosis remits, while delusions and hallucinations persist, if new words are formed by the patient, and if the sleep is good without improvement of the psychic symptoms, and the bodily weight increases, it speaks strongly for a transition into incurability.

For the rest, the rule adopted in practical medicine is true in psychiatry even to a greater degree: One should be very careful in making the prognosis.

The coefficients from which the prognosis is formed are much more uncertain and wavering in psychoses than in any other diseases, and we know that prognoses seemingly thoroughly well grounded quite often miscarry.

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## G. General Treatment.<sup>1</sup>

The prophylaxis of psychoses has for its primary object the removal of the most important and most frequent cause of mental disease, namely, hereditary predisposition, by preventing, above all things, the marriage<sup>2</sup> of persons who have been insane

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<sup>1</sup>Emminghaus. Behandlung des Irreseins im Allgemeinen. Handbuch der speciellen Pathologie u. Therapie von Penzoldt u. Stintzing. Bd. 5, 1901; Pelman. Ueber die Behandlung der Geisteskranken. Deutsche Klinik, 1902.

<sup>2</sup>Wm. C. Krauss, Degeneracy. Buffalo Medical Journal, November, 1898.

or are alcoholists, morphinists, epileptics, or suffering from other hereditary nervous diseases or their equivalents.

The impossibility of acting by legislation admonishes us to accomplish as much as possible by precept.

It is very important to keep children hereditarily tainted in other society than that of a nervous or insane father and a nervous or insane mother, to place them in proper homes in order to paralyze the injurious influences of being brought up by their parents or imitating them. In Prussia, the carrying out of the law of July 2, 1900, relating to the bringing up of minors and those without means, provides such protection under certain conditions.

Care must be taken in the choice of a calling in regard to the peculiarities of those tainted hereditarily, and, as a rule, those occupations should not be advised which demand strenuous mental exertion or much exercise of the judgment.

The prophylaxis of mental diseases consists also in the warfare against alcoholism and the spread of syphilis, in the improvement of the nutrition of the people, and the carrying out of tenement-house reform.

That the advancements made in general hygiene may attain great success in this direction is shown by the diminution of cretinism in Germany since the betterment of the hygienic conditions in certain localities, and the use of pure drinking water.

The first question for the physician, after ascertaining that a mental disease exists, will be whether treatment and care in an institution are demanded, or whether the patient can remain at home.

*Entrance to an institution* will be necessary:—

1. If the patient is *raving*.

The inconveniences of a private house, the lack of the necessary skilled attendants for restraining the patient, the proper regard for the other persons of the dwelling call for the removal of the patient. An exception can only be made when the form of the raving gives hope of a speedy termination, and supervision at home is then possible for a short time.

To these exceptions belong many cases of post-epileptic

raving, epileptic equivalents, hysteric raving, and raving following intoxication.

2. If the patient, without raving, when at liberty, is *dangerous to himself or to others*.

In this class belong all those cases where *suicide* is to be feared, whether the patient has threatened or already made such attempts, or if the attempt is to be anticipated from the type of the mental disease. Especially is this of great importance in *melancholia*. Every melancholiac thinks of suicide, and the physician in each case should make it understood that he will not be responsible in this respect if the patient remains at home. For like reason such patients should not be sent to sanitariums unless they can be carefully guarded.

Similarly, the melancholic states of other psychoses are to be considered in reference to the tendency to suicide (alcoholism, paresis, senile dementia).

The patient may also be dangerous to himself and to his family, if he dissipates his property, makes foolish pecuniary obligations for the future, contracts marriage, or makes a testament or changes one already made.

For these reasons patients who suffer from expansive delusions, delusions of grandeur (maniacal, periodically maniacal, maniacal paretics), should be confined.

*Danger for others* may proceed from ideas of persecution with or without sense deceptions. The hallucinators are specially dangerous.

Hallucinated paranoiacs, epileptics, and alcoholists should be sent to an institution in every case.

Only when a considerable mental weakness prevents the transition of the hallucinated sensorial excitement into action, or makes it very improbable, should the commitment to an institution be changed for constant supervision at home.

But without hallucinations, a system of insanity may be dangerous, especially that of persecution, before the mental weakness has yet appeared (paranoiacs, alcoholists, querulants).

Finally, there are persons of weak mind, who do not have delusions nor sense deceptions, but require detention on account of their indecent actions.

3. *Sitophobic* patients should be sent to an institution, since



only there can they find the necessary supervision and treatment.

4. Without the factors above mentioned, it may be necessary to send the patient to an institution when his social condition does not permit of *care and attention* at home.

5. The *cure* of a patient demands his being committed to an institution in order to keep him thoroughly quiet, to withdraw him from the momentary injurious influences of his former environment, to prevent him from encouraging and aggravating his disease through excesses and debauchery, and finally to give him the opportunity for a suitable treatment, which would not be possible at home.

In exceptionally favorable conditions a villa or outlying cottage may afford all the conveniences of an institution.

If commitment to an institution has been decided upon, it should be done as soon as possible. In many cases the patient thinks, if nothing has been told him, that something extraordinary is going on, perhaps that he is to be "taken to an insane asylum," and accordingly he tries to escape or commits suicide. This is especially the case with melancholiacs and paranoiacs.

Before his transference one should tell the patient openly that he is to be taken to a hospital and have the necessary force ready to subdue any possible resistance. With few exceptions the patient yields, sometimes only when he has seen the superiority of force against him. But even if he does not yield it is better for him if force be used than to abstain and keep him in constant excitement and fear of another ordeal.

Exceptionally, in order to avoid a crowd running to the house on account of the screams of the patient, stratagem may be used in which the officials of the institution to which the patient is to be removed must take no part. The employment of narcotics in order to convey him to the institution is to be discouraged.

The *treatment* should first endeavor to reach the *causal indication*.

This will be discussed in the chapters on Special Psychiatry; it demands, above all, an exact anamnesia with the most careful physical examination.

Just here it may be mentioned that the remedies which

have acted favorably in a definite causal indication are often used without such indications, but simply from an empirical standpoint. Thus the thyroid preparations furnish an example, whose wonderful effects in myxedema will be discussed later. A critical analysis of the results gained by the use of this remedy in *non-myxedematous* psychoses does not encourage further experiments along this line.<sup>1</sup>

Symptomatically the following conditions which appear in the most varied psychoses may be treated as follows:—

1. *Anxiety and unrest.* Against these we employ the bromide preparations, several times daily at 1, 1.5 to 2 grams, also in connection with aqua lauroc. and extr. hyoscyam. (solut. natr. bromat. [12 to 18] 150.0, aqua lauroc. 6.0, extr. hyoscyam. 1.0, syr. simpl. 30.0, a tablespoonful three times daily).

Antipyrin 0.5 to 1.0, two to three times daily; phenacetin 0.5, two to three times daily, both eventually with codein. phosphor. 0.03 to 0.05.

Trional in small doses, three to four times daily, 0.5 g. may also be tried.

By far the most effective is opium (either crude or as extr. opii, or in doses of 0.05 morning and noon, 0.10 evenings, if necessary; increasing to 0.10 morning and noon, 0.15 [!] evenings, as tinct. opii simplex at 10, 15, 20, or 25 [!] drops). See also treatment of melancholia.

It is necessary to watch carefully the condition of the heart. Intestinal obstruction is to be combatted by the use of fruit, by saline laxatives, or by tea from Cortex rhamni frangulæ.

In many cases where opium brings no rest, one may obtain it by morphine, best in subcutaneous injections (0.01 to 0.015). It is not necessary to fear that morphinism will proceed from this; under medical direction the habit which may be formed may be cured before the termination of the disease.

The addition of small doses of scopolaminum hydrobromicum (0.0002 to 0.0003) with morphine may be used. Where vomiting appears after injections of morphine, one should add small doses of atropin (0.0001 to 0.0002).

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<sup>1</sup>Pilcz. Jahrbuch für Psychiatrie, 1901, page 92.

*Rest in bed* (clinothrapy) (Guislain, Neisser) also acts as a sedative; this is to be recommended for all anemic and badly-nourished persons, and is now almost universally used in acute psychoses. Clinothrapy acts favorably on the circulation (the acceleration of the pulse diminishes), the respiration becomes slower, and it favors the increase in weight, or rather inhibits the decrease of weight.

It is to be used carefully where onanism exists, and besides hypochondric conditions demand that the rest should be interrupted quite often. If too long continued it makes the patient apathetic and listless. Clinothrapy cannot be employed where the patient acts foolishly in bed, turns somersaults, and the like.

*Wet packs* also act as sedatives. The entire body may be wrapped in sheets previously moistened in water of from 85° to 92° F., and afterwards covered with a woolen blanket. The patient lies thus for one to two hours. This procedure may be renewed several times a day.

Finally, *protracted* baths of uniform temperature of 85° to 95° F. may be used, with cold compresses on the head.

2. *Insomnia*. Even if a constant insomnia injures the patient and makes the intervention of medical aid necessary, it is also essential to warn against the too frequent employment of hypnotics, which are not indifferent for the condition and the general nutrition of the patient.

In any case one should try to induce sleep by the above-mentioned means; besides the full baths, in the evening, sitz baths of half an hour long at 95° F., putting on damp stockings, wet cloths on the body, massage an hour before bedtime, all these should be used before prescribing hypnotics. The last should not be employed every night.

We may consider as hypnotics:—

Morphine, subcutaneously, 0.02 to 0.03.

Dionin, 0.01 to 0.015, likewise heroin, 0.01 to 0.02 subcutaneously.

Sulphonal, 1 to 2 g., best administered in some warm liquid as milk or water.

(Symptoms of poisoning after sulphonal appear in the urine as diminution of the quantity with red coloring, which is

conditioned by hematoporphyrin. The red urine becomes dark after standing.)

Trional and tetronal, 1 to 2 g.; hedonal, 1.5 to 2.5 g.; urethane, 2 g.; amyhydrat, 3 to 4 g. in capsules or as clysters with mucilaginous gum Arabic.

Paraldehyde (5 to 8 g.) gives the expired breath an offensive odor, and is refused by many patients for this reason; it is to be given with sugar-water or raspberry essence (to be avoided in all irritations of the mucous membranes of the stomach and of the respiratory apparatus). In enemata it may be given as an oleaginous emulsion.

In alcoholic psychoses (especially in delirium tremens) and with those maniacally raving, chloral hydrate is active where the above-mentioned remedies fail. Dose 3 to 4 g. in solution with syr. aurant. cort., eventually also in clysma. With the use of even a small quantity of alcoholic drinks along with chloral hydrate, a rash often appears (redness of the entire body, especially of the upper part), which generally disappears after twenty-four hours. Care is advised in heart diseases.

Finally, in very great unrest and where no remedy can be given the patient per os or per anum, one may inject subcutaneously scopolamin. hydrobromin. 0.0005 to 0.001; or du-boisin, 0.0008 to 0.001 to 0.0015. After five or ten minutes, rest generally ensues, but which as a rule lasts only a few hours. A long-continued employment of this remedy is not advisable, since it acts very injuriously upon the nutrition, and the patients easily collapse.

In many cases, all these remedies prove inefficient; one should not increase the dose then, since there is danger of calling forth symptoms of collapse in passing a certain limit. Sometimes the patient sleeps better without a hypnotic than with one.

In very emaciated persons, in psychoses, after acute infection psychoses, in delirium hallucinatorium, a glass of beer or ale, several glasses of heavy wine, or an egg punch acts better than hypnotics.

3. *Refusal of nourishment.* In patients who refuse food one should never neglect to leave on their night-table a cup of milk or bouillon, some cakes or rolls. It often happens that

they take these when they think themselves unobserved, although they have just refused nourishment.

But if the patient does not take food in this manner and it is not possible to feed him with a spoon or cup (beaked cup), one must give the food by the *esophageal sound*.

Sometimes even the threat of this sort of feeding, or the preparation for it, moves the patient to take food voluntarily.

According to the strength of the patient, one may wait in absolute abstinence three to four days after the last food was taken; if there is the chloroform-like aceton odor in the expired air, one should not delay in the use of the esophageal sound.

Whether the patient lies in the recumbent position with moderately raised head or sits on a chair, the tube is slowly introduced by the lower nasal passage, or, if it does not pass, by the mouth, with the aid of Heister's speculum.

One then gives daily two portions of milk, 1500 cubic centimeters, 300 grams sugar, six eggs with water, and one glass of wine.

Not more than one liter of liquid nourishment should be given at one time.

One may add nutritive enemata to the feeding by the *stomach tube*. Eventually there may precede in suitable cases: first a cleansing clyster, then an opium suppository (extr. opii, 0.05 to 0.075), and after about fifteen minutes Leube's pancreas meat clyster or Ewald's egg clyster, or, according to Riegel, 200 grams milk, 1 glass red wine, 2 eggs, some common salt, or, according to Ziehen,  $\frac{1}{2}$  liter water, 2 eggs, 2 tablespoons of starch, and a pinch of common salt.

Since the patient very often expels the clyster soon after its introduction, this mode of feeding may prove ineffectual.

One should combat collapse which is to be feared or has appeared from lack of nourishment, by *infusions of common salt*.

One may take as most suitable 9 grams of common salt to 1 liter of boiled water; warm the liquid to 105° F., and inject several times daily to the amount of 200 cubic centimeters. The syringe should be previously boiled.

4. Against *weakness and collapse*, besides the common salt infusions just mentioned, *caffeinonatrium salicylicum* (contains 62.5 per cent. *caffein*), one or two injections of a 20 per cent.

solution, is recommended; subcutaneous injections of ether (at the back or breast, not in the extremities on account of bringing on paralysis), or subcutaneous injections of ol. camphoratum in doses of a Pravaz syringe, repeated as needed.

5. Against the patient soiling himself with *urine and feces* and *smearing himself with the stools*, besides constant watching and frequent taking to the closet, regulation of the diet in a suitable way, so that the nutrient media favoring diuresis and liquid nourishment generally may be limited, and by giving food which forms little fecal matter, should be employed.

One should wash out the rectum several times during the day to prevent the patient removing the feces and smearing himself therewith.

6. When all other means fail to pacify the patient in *maniacal* rage for destruction, isolation in a dark padded room is necessary.

This isolation is preferable to the attendants holding the patient and the strife which generally follows.

The use of mechanical means of compulsion (straight jackets, binding the hands, tying the feet together,) is only permitted when certain injuries or the bandages made for their cure demand the absolute rest of the patient.

7. Against *suicide* the only protection is the continual watching of the patient. Patients suspected of suicidal intent should not be left unwatched for a moment, day or night.

8. *Decubitus* may generally be avoided by scrupulous cleanliness, foldless bedclothes, and water cushions, but not always (*decubitus acutissimus*).

If it appears, one should use zinc ointment, lanolin, borated vaseline (10 per cent.); to give free drainage to gangrenous sanies; lax granulations should be treated by acetated clay, wine of champhor, or alcohol (20 per cent.). After spraying, one should carefully dry the surrounding skin.

The *nourishment* of the insane, unless special indications determine otherwise (*e.g.*, diabetes, anemia), should consist of a mixed diet in which fruit and milk particularly should be freely given.

Alcoholic drinks should be given only in response to special indications.

The physician must approach the insane person with earnestness permeated by mildness.

He should avoid threats and joking at the delusions or the appearance of the patient. In the presence of the patient he should not speak of the prognosis, which is perhaps unfavorable, any more than he would in the presence of a normal person, nor of things generally which might wound the patient in his normal condition. Just as little should the physician take up the completely useless task of attempting to reason the patient out of his hallucinations or delusions (reasonable grounds disturb him), but he should not concede that they have any foundation or that there is a possibility of such a basis.

If he does not prefer to let the patient talk without answering him, he will best repeat continually, "that is the product of a pathologically excited fancy."

As soon as possible the patient should be occupied with gardening, sawing wood, solving puzzles, and the women with the work to which they are accustomed.

For the chronically insane, colonization for agriculture, by which Paetz has rendered great service in Germany, has succeeded very well.

## PART II.

# SPECIAL PSYCHIATRY.

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Up to this time there has been no success whatever in arranging the different forms of psychoses under one system or classification. But those mental diseases, which rest on a defective development of the brain—*idiotism*—and those which arise in later life and show a visible organic change of the brain—*organic psychoses*—may be distinguished without difficulty.

It would indeed be questionable to group under the *intoxication psychoses*, those which owe their origin to special toxins, and as *psychoses conditioned by central neuroses* those developing from epilepsy, hysteria, or chorea.

On the other hand, there is a great difference of opinion among authors how to divide those mental diseases in which no anatomical findings have hitherto been met and which do not belong under any of the forms named. They are designated as *functional psychoses*, by which it is not said that anatomical changes do not exist, but only that we have so far been unable to verify them.

If in this respect they resemble the functional peripheral neuroses, it seems best, in want of a better arrangement, to associate them with the neuroses, and to distinguish between hyperesthesia and neuralgia, kinesthesia and paralysis, and to designate hyperesthesia as melancholia, kinesthesia as mania, and the paralyzes as dementia. Paranoia is to be designated as an atactic mental disturbance, that is, as a mental difficulty in which the disturbance of the coördination of ideas is primary. (With this the crude power, that is, the intelligence, may remain undisturbed, especially at first.) Finally, that form in which the hallucinations are primary and essential and appear with a considerable clouding of the consciousness, is characterized as delirium hallucinatorium.



## I. IDIOTISM.<sup>1</sup>

We include under idiotism those states of mental weakness and paralysis which are conditioned by an inhibition to the development of the brain.

If the mental weakness is present only in a certain low degree, we speak of imbecility. But if it is more pronounced or if there has been no mental development, we call the condition idiocy.

### 1. Imbecility.

According to the cause of the imbecility, whether it had its origin before birth, or whether the disease of the brain first appeared in childhood, we distinguish,

(a) A *congenital* and

(b) An *acquired* imbecility.

*Congenital* imbecility shows itself, in the great majority of cases, in the first years of childhood. The children are strikingly unruly, obstinate, sometimes violent toward their relatives, and there is a tendency very early to injure their playmates, brothers, or sisters. An inclination to lying, a joy in tormenting animals, an unmotivated change of disposition distinguish them, even before the school age, as peculiar. They are lazy, inattentive, and make little progress in school; frequent punishments pass without effect, only to make them even more stubborn and obstinate. If they are the children of the well-to-do, private teachers are employed, the schools are changed, they are sent to boarding-schools, without effecting any essential change in their condition. After the end of the school year, during which he attends but few classes, the imbecile is dismissed by his first master on account of his incapability and improprieties; he goes to the second and third, with like result.

When he is sent away by these, if his means fail, he becomes a beggar and a vagabond.

In contrast to these *active* imbeciles, the *anergic* or *apathetic* imbeciles show an entirely different type. They are distin-

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<sup>1</sup> Hammaberg. Translated by Walter Berger. Leipzig, 1895. Ziehen. Die Geisteskrankheiten des Kindesalters. Berlin, 1902.

guished by a certain indifference and quietude, they do not understand how to play with other children, stand aloof, and are quite often described as good and obedient. Their defect is first clearly shown when they go to school. Here they are not capable of concentration (aprosxia), do not, therefore, understand their tasks. They remain in the lowest classes, and, when they leave school, may make a living if they take up an occupation which does not demand special independent mental powers, they marry and pass through life, if no special accident happens, without their mental inferiority becoming generally known. But with such imbeciles it is well if no stumbling-block impedes their way, for, if so, they stumble and cannot surmount their difficulties, but fail mentally and materially. To this class of placid imbeciles, who perform their task in the country as field laborers, belong also those soldiers who fail very often after entering military service and then, after many punishments, perhaps, are first recognized as mentally diseased.

Finally, a third class of imbeciles should be mentioned, who, without showing striking disturbances, seem to be wonders, when they first go to school, on account of their special abilities. At a certain age, but especially about the time of puberty, the mental development ceases without any new injurious factor having appeared. Sometimes this cessation occurs suddenly, and their knowledge ceases with what they have already learned.

In many cases hebephrenic phenomena appear, generally with hypochondric complaints, and the rapid development of an idiocy, which Morel has called precocious dementia, follows.

In *acquired* imbecility the intelligence generally suffers only; those disturbances in the feelings and the activity of the mind which have been described above are either entirely wanting or are only slightly developed.

### **Special Symptomatology.**

#### *1. The Power of Reproduction—Memory.*

In a number of imbeciles the memory is good, sometimes so good that the hypermnnesia of these imbeciles is commented on. In many cases, on the basis of this excellent memory, imbeciles manifest an unusual but restricted talent, but which has essen-

tially a mechanical character. Thus imbeciles may become mathematicians, pianists, artists, and the like, and may pose by their knowledge of languages (polyglots), or by reproducing entire paragraphs of legal documents.

In acquired imbecility, what was learned before the disease started may generally be reproduced, while the memory is weakened for what follows, and is little capable of grasping and retaining any thing new.

## 2. *Thought.*

The weak-minded reproduces what he has heard or what he has learned, but he does not produce anything. If he utters judgments, they appear, when examined closely, ready-made as he has heard them from others. A true understanding of them is wanting, as well as the possibility of telling how the judgment has arisen. Hence these judgments, when they are imperfect or incorrect, are difficult to undermine or controvert, since the ideas, which form the basis of the judgment and which should be corrected, are wanting. The imbecile repeats the Ten Commandments, he understands the command which he has disobeyed, but is incapable of seeing the reasons which have led to the divine commandment or to the provisions of the criminal code which he has transgressed.

The associations of the imbecile are pathologically disturbed, first, because he lacks the normal power, and, secondly, because they are perfected too slowly.

From the lack of power proceeds the want of energy for the execution of what the patient has decided to do. He often takes up something new with good intentions, but lacks the persistence to complete the work which he has begun. Much is undertaken, but nothing completed.

If the rapid intergrasping of the associations, the contemporaneous appearance of the associating and contrasting ideas is necessary for a healthy judgment, then the judgments of imbeciles suffer from the slowness with which they are perfected. Hence imbeciles are generally credulous, are laughed at, they are often used as cat's-paws and afterwards find their interests injured. New religious and political sects, mysticism, spiritualism generally find an especially large number of adherents

among imbeciles, on account of their lack of judgment which proceeds from the above-mentioned causes. The unsteadiness of the attention, that is, the lack of concentration on a determined idea or a given series of ideas, is connected with the slight power of the ideas.

The attention of imbeciles, if it exists, is intermittent.

Psychometrical examination has attempted to represent by figures the diminution of the power and rapidity of the associations. Ziehen finds the average time of association in imbecile children for adding 1 to a number equal to  $\frac{705}{100}$  of a second, while in healthy children the time is on an average  $\frac{116}{100}$ .

The imbeciles as a rule show a high degree of egotism. Even at home they are placed after their healthy brothers and sisters, scolded and punished at school, in life driven here and there, and are not in a condition to recognize the cause for their own lack of worth; they behold antagonists everywhere, and hence believe that they are forced to place their own interests foremost in their strife with the external world. Without altruistic feelings, their love for the Ego increases, and quite often the overstrained care for their own well-being leads to hypochondric anxiety. On the other hand, egotism often calls forth boastfulness, and the impulse for the satisfaction of egotistic objects allows immoral, punishable actions to take place from the lack or slight strength of contrasting ideas. So far as concerns the question of the enjoyment or the defense of the Ego, a peculiar cunning is often developed.

The injuries which the imbecile receives from others increase his suspicion of his environment to ideas of detraction or prejudice, even to delusions of persecution, which are distinguished from those of paranoia by their shallowness and by their variability.

### *3. Anomalies of the Feelings.*

(a) *The sensual feelings.* Many imbeciles show a pathological heightening of the sensual feelings: gluttony, inclination to excesses in Baccho and in venery; others, again, show a depression, especially in the province of sexuality, or perversities; sometimes abnormalities in this direction are not present. A feeling of disease exists only exceptionally in imbeciles.

(b) *The feelings of judgment.* Since the ideas are wanting in strength, and hence are superficial, in the same manner the feelings of judgment are subject to facile changes. The egotistic feelings remain dominant, the altruistic feelings are weak or not present. Friendship and thankfulness subsist as long as they harmonize with his proper interest, and are quite often expressed in the most fawning manner. Such turn around and become the gravest accusers, if self-interest is apparently endangered. In regard to the religious feelings, the imbecile is often distinguished by a maudlin sentimentality; but he curses God and the world if he meets with a mishap. The dispositions of imbeciles correspond to the superficiality of their ideas and changing feelings—now depressed, now exalted, now scornful, now excessively devout.

#### 4. Action.

(a) A class of imbeciles take care of the labor assigned them regularly and punctually, but, as said above, no unexpected or sudden obstruction should be placed in their way.

These anergic imbeciles are sometimes less distinguished by the abnormal actions which they perform than by neglecting certain things which a normal person would have carried out.

(b) Other imbeciles are incited to activity only with difficulty. They will begin “to-morrow.” They do not rise early, stay for hours in one place, take a long time to clothe themselves, and the like.

(c) There are imbeciles who are easily excited and irritated; with lack of judgment they run after all sorts of fancies and vagaries, and do not lead a regular life on this account.

(d) Another class of imbeciles are distinguished from youth by an inclination to immoral actions. They have been described above as active imbeciles. By far the greatest number of those diseased individuals who have been described as morally insane belong here.

Sometimes the action is directed preferably to carrying out a certain kind of transgression, and people then speak falsely of a *monomania* (kleptomania, and similar conditions), while they have overlooked the other pathological phenomena.

With regard to the mental disease of the transgressor in

these crimes being too often unrecognized, and the motive of the punishable action being falsely judged, the following should be emphasized concerning those immoral and criminal actions:—

1. The above-mentioned pathological egotism incites to gain as much advantage as possible for the person himself.

2. Many imbeciles wish to obtain satisfaction for the injuries which they believe others have inflicted upon them intentionally or unintentionally, or to revenge themselves.

3. The want of moral feelings opposes no restraint, or not strength enough to the carrying out of the actions in 1 and 2.

4. The want of judgment does not allow the imbecile to recognize the consequences of the contemplated or completed action.

5. The imbecile is often led into misfortune by being easily persuaded by others. Quite often he is the instrument of other normal criminals. Here, also, belongs the phenomenon of the imbeciles who have a great inclination to imitation.

6. The imbecile often acts impulsively, yielding to the momentary impulse; the strength of the impulse hinders the consideration which should precede the action.

7. In weighing many of the acts already mentioned, the intolerance of many imbeciles to alcohol should be considered.

These active imbeciles are to be designated as *anti-social*.

The physical changes which accompany imbecility, its etiology, and diagnosis will be considered in connection with the discussion on idiocy.

The course of imbecility shows, in a series of cases under favorable circumstances, a uniform pathological type, reaching into an advanced age. Sometimes intercurrent hallucinations appear which may bring on delusions. The hallucinations like the delusions are not very complicated, corresponding to the limited intellectual acquirements. On the basis of imbecility arise sometimes transitory periodical states of depression and exaltation, which generally leave behind a further injury to the mental power. Sometimes paranoia develops on the basis of imbecility. Paresis appears only very exceptionally in imbeciles.

The complication, often observed, of imbecility with alcoholism entails the most serious injuries to the remaining mental powers.

## 2. Idiocy.<sup>1</sup>

We distinguish here, as in imbecility:—

### (a) The Congenital Form.

The children are recognized as abnormal even in the first months of life. They show great helplessness in feeding at the breast or from a bottle, and seize the nipple with great difficulty. Many sleep constantly and can hardly be awakened, others cry obstinately day and night. The smile of the developing child is wanting, as well as the joyful kicking when the hampering swaddling clothes are removed. Sometimes physical signs of paralysis, spasms, marks of degeneration confirm the diagnosis of idiocy in the first months of life.

In its further course defective, or want of development of the mental activity appears in a more or less striking manner and in very different degrees.

As a rule, the highest degree of idiocy does not even reach a stage of mental activity; the face remains expressionless, is not moved by laughter or tears; there is no development of speech, at the most only inarticulate sounds are uttered; the child does not recognize those nearest to him; it must be fed, or else greedily devours its food; it soils itself continually, and in many cases does not have the capability of moving about.

Between this highest degree of idiocy in which an intellectual life is totally wanting and the imbecility just described, there is a long series of transitions, whose essential symptoms will be shown in the special symptomatology.

### (b) The Acquired Form.

The child does not show any abnormalities before it is attacked by the disease which stops the further development of the brain. Here the signs of degeneration generally are absent. According to the age in which the disease attacks the child, and according to the intensity with which it destroys what has been acquired, the idiot will present a very different type in his later life.

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<sup>1</sup> Idiot is derived from *ιδιος*, isolated, because he is not in a state to associate with others.

### **Special Symptomatology of Idiocy.**

#### *1. The Sense Perceptions.*

In the severest forms of idiocy there are generally no sense perceptions. The light is felt, but its significance is not recognized. Such children hear, but they do not learn to understand the meaning of the words. Identification also fails; the child knows its mother, but does not know its bed.

A condition is present in which a sense perception has never taken place, hence hallucinations cannot appear later. Likewise, intercurrent hallucinations appear in idiots, even if they do not have the intensity and significance of the hallucinations of other mental diseases. Infectious diseases of children, which frequently condition hallucinations and deliria, are wont to call them forth in idiotic children only exceptionally and to a limited degree.

#### *2. The Power of Reproduction—Memory.*

In pronounced cases memory does not generally exist. It is present in those of less degree, and on its development depend special capabilities which are sometimes found in congenital idiots.

#### *3. Thought.*

The capability of forming judgments, drawing conclusions, is wanting in idiots. Although it may apparently be present, it is only the reproduction, through memory, of the judgments of others. While many idiots can add and subtract, they are capable of multiplying and dividing only exceptionally. Idiots do not acquire the conception of time and space except defectively. The average degree of normal intelligence corresponding to their age is often used as a means of comparison; we say, *e.g.*, a twelve years' idiot has the same intelligence as a child of three.

#### *4. The Feelings.*

The sensory feelings, the feelings of hunger and thirst are diminished in many idiots; on this also rests the lack of feeling of satiety. In spite of masturbation, which is found in many idiots, it must not be assumed that they have the sexual feelings



heightened. The sexual impulse often expresses itself towards others in a shameless and reckless way. Idiots have only exceptionally the feeling of disease, and in the feelings of judgment only the egotistic feeling is, as a rule, well developed.

According to their external behavior, we distinguish *apathetic* and *anergic* idiots from *erethic* and *versatile*, which latter are now serene, caressing and kissing continually, now again weeping, striking, and screaming.

The *malignant* or vicious idiots are mostly the product of rough treatment, repeated punishments, and constant abuse.

Finally, there are idiots of constant good-humor, who are designated as *companionable idiots*.

### 5. *Speech.*

Some idiots are mute, either because they have not acquired word images (deaf-mute idiots), or because they lack ideas which they can express (*alogia*, *alogic idiots*, *idiotic mutism*), or because they have no need to express by speech the ideas which they possess, or because a motor speech center has not developed or has been destroyed by disease (*motor-aphasic idiots*), or, finally, because the motor-conducting apparatus for ideas of speech has not been developed or has been destroyed (*anarthric idiots*).

Those idiots who do talk, generally begin after the fourth year or later. Many acquire only single words, others do not reach the normal formation of sentences (*akataphasia*, infinitive speech), others stammer (*dysarthria literalis*). Stuttering is rare in idiots, while it is frequent with imbeciles. Many idiots lisp, others speak with a peculiar accent, and, finally, there are so-called "*eternal babblers*" among patients with acquired idiocy, who talk unceasingly without understanding what is said. In spite of the defect of speech, many idiots learn to sing very well.

The disturbance in speech corresponds to those in reading and writing. A great number of idiots generally do not learn to read, and by far the greater number do not learn to write.

### 6. *The Physical Condition.*

Rhachitis and scrofula are very frequent in idiots. Connected with the last is the frequent appearance of adenoid

growths in the naso-pharyngeal vault, upon which some have tried to lay the impossibility of concentrating the attention on a determined object (aproxexia, Guye). In the great majority of the cases, so-called signs of degeneracy are found in idiots, long arms, short legs, abnormal formation of the cranium, disturbances in the formation of the teeth, and other stigmata of the various organs.

Strikingly frequent are ambidextrous idiots, while right- and left-handedness are met as frequently as in normal individuals. While some idiots are heavy and clumsy in their motions, others show a monkey-like activity. Automatic movements, nodding, shaking the head, swinging the body to and fro are often observed.

We distinguish as a peculiar subclass of idiotism *paralytic imbecility* or *idiocy*, states of bodily paralysis and contractures which have generally proceeded from those diseased states of the brain and its membranes which are designated as *spastic cerebral palsies of children*.<sup>1</sup> The paralyzes are either hemiplegic, diplegic, or paraplegic, quite often connected with athetosis. Abortive forms appear frequently, which can be distinguished by the exaggerated tendon reflexes, in spasms of the lower extremities (*paraspasmus cereбрalis*), or of the upper extremities without paralyzes (*dispasmus cereбрalis*), in other cases only by sporadic muscular paralyzes (König).

A further subclass of idiotism is constituted by that form which is connected with epilepsy (epileptic imbecility or epileptic idiocy). The epileptic seizures in the congenital form often appear in the first months after birth, may vanish later or be replaced by epileptic equivalents. In later life (about the fortieth year) epileptic seizures, which have previously been present with idiots, generally disappear.

Almost a third of all cases of idiocy are transitorily or permanently accompanied by epileptic seizures.

#### 7. *Sensory Organs and Cutaneous Sensations.*

Five per cent. of all idiots have congenital or acquired blindness. A peculiar form which has been described under

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<sup>1</sup> Wachsmuth. Cerebrale Kinderlähmung und Idiotie. Archiv für Psychiatrie, 1901, xxxiv, 3.

the name of Sach's amaurotic family idiocy (Warren Tay, 1881<sup>1</sup>) shows, besides the atrophy of the optic nerves (in the region of the macula lutea a red spot surrounded by a white halo; according to the observations so far made, not congenital, but arising in the first years of life), weakness or even paralysis of the entire musculature of the body.

Congenital or acquired *deafness* in idiots is rarer than blindness.

The sense of touch and muscle sense are generally diminished.

The reflexes show abnormalities only in the paralytic form of idiotism.

*Etiology.*—The ratio of the frequency of idiotism in boys and girls is as two to one. The percentage of the first-born is strikingly large (Langdowne, 24 per cent.).

The ratio of congenital to acquired idiotism is as three to one.

Idiotism may arise from the following causes:—

1. In the germ: Marriage among blood relatives (consanguinity), begetting in drunkenness, a wide disparity in the ages of the parents, mental disease or severe neuroses of the parents, alcoholism (in 10 to 20 per cent. of all the cases of idiocy), morphinism of the parents.

2. In injuries which affect the fetus: Traumata of the uterus, psychic shocks to the mother, diseases of the mother during pregnancy, hereditary syphilis; seldom hereditary tuberculosis.

3. In injuries at birth: Delayed parturition with contracted pelvis, use of forceps with impressions on and fractures of the cranial bones. These cases are generally connected with Little's disease.

4. In the injuries received after birth, in which the hereditary basis may also coöperate as a coefficient; injury to the head, binding the head of the child, remedies used to keep the child quiet (alcohol, opium compounds), which the nurses or attendants administer, diseases of infancy, especially cholera infantum in the first years of life, scarlatina, also syphilis, and the like.

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<sup>1</sup> Frey. *Neurologisches Centralblatt*, 1901, 836.

**Pathological Anatomy.<sup>1</sup>**

The cranium very often shows the following defects:—

Microcephalus, hydrocephalus, skaphocephalus, the Mongol type, plagiocephalus; nannocephalus and progenic cranium are also observed.

Broca designates as microcephalic all brains of 1019 grams or less in men, or of 907 grams or less in women. See chapter on Degeneration.

He divides microcephalus into (1) *true* (absolute arrest of development), (2) *pseudomicrocephalus*, where pathological processes may be shown, and (3) the *combined*, the combination of the two preceding.

Microcephalic idiots are always excited, irritable, with a lively expression of the countenance, often loquacious; the hydrocephalic idiots, on the contrary, are generally apathetic, with expressionless face, rarely excited, and move about very little.

Pachymeningitis, meningitis, adhesions of the membranes to each other, to the inner vault of the cranium, or to the surface of the brain, are often found in idiots.

The weight of the brain is very much diminished, especially so in microcephalics. Yet there are occasional strikingly heavy brains, especially in tuberous hypertrophy of the brain.

Porous-like defects in the lobes of the cerebrum (porencephalus, Heschel, 1859), microgyria, superficial folds and fissures of the cortex with very small convolutions, very serpentine, sometimes with great development of the gray and less of the white substance, absence of the corpus callosum, defective development of the operculum, of the cerebellum, and heterotopia of the gray substance are occasionally found. Sometimes islets of sclerosis distributed throughout the brain are present. With these are often found pathological changes in the spinal cord, as hydromyelia, syringomyelia.

The microscopic examination often shows the ganglion cells of normal frequency and consistency. The abnormal condition is then to be sought preferably in the pathological change of the association fiber systems.

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<sup>1</sup> Schütte. Zusammenfassendes Referat. Centralblatt für allgemeine Pathologie u. Pathologische Anatomie, 1900.

The *course* in acquired idiocy, especially where epileptic seizures are frequent, is progressive, while the mental weakness increases more and more. States of excitation and depression appear intercurrently both in imbecility and idiocy. Severe cases of idiocy seldom reach an age of over thirty years.

*Diagnosis.*—For the proof that imbecility or idiocy exists, it must be shown in the first place that there is a chronic condition of mental weakness. All possible forms of mental disease may appear in childhood, which must, however, not be reckoned with idiotism. But if a chronic condition of mental weakness is shown in adults, the next question will be whether it was congenital, or arose in early youth, or whether it first appeared after the brain had attained its full normal development. Right here the anamnesia must be the decisive factor and supply the information concerning what the patient has already experienced in the course of his life. If idiotism is proved, it will be necessary to ascertain further whether it is congenital or acquired, whether it is complicated with epilepsy or paralysis.

Differentio-dagnostically in imbecility, it is of the utmost importance to determine whether it concerns a person but little developed mentally or one mentally diseased. The degree of mental development which a man may attain is dependent not only upon the normal or pathological conditions of the brain, but also upon the precept, the training, the education; in short, his environment.

Hence, in framing the clinical picture of an imbecile we must make a complete history of his whole mental development. What may seem to be weak-mindedness in a professional man, may appear normal in a shepherd.

If there are physical signs of brain disease, like paralytic states, epilepsy, very extended and considerable stigmata of degeneration, then the retardation of the mental development may be all the more easily diagnosed as pathological.

The boundary between idiocy and imbecility is evanescent. We designate as imbecility that grade of idiotism in which the patient is able to follow a calling, when he is a part of life, while the idiot simply occupies space and performs no function in the body politic.

Finally, it is to be mentioned that paresis in children may

make the impression of an idiotism. Here the proof of hereditary syphilis or that acquired in childhood, together with the absence of the pupillary reflex, abnormalities in the tendon reflexes, especially paralytic disturbances of the speech and the progressive course, are of differential significance in reaching a diagnosis.

*Prognosis.*—Idiotism is an incurable disease. Improvement in the mental condition of epileptic idiots after suitable treatment for epilepsy is often observed. The acquired form of idiocy is most unfavorable prognostically in reference to reaching a certain degree of mental development.

*Treatment.*—Prophylaxis must regard all those injuries in the ascendant which have been previously mentioned: Dissuade marriage among blood relations, marrying mentally diseased or very nervous persons, limitation of the use of alcohol, and restriction in the spread of syphilis.

In imbeciles much may be accomplished by employing them in occupations suitable to their capacities. The help classes and help schools which are at present becoming more numerous are a very suitable aid to the individual imbecile.

In the treatment of idiocy the first question is whether the child should be taken to an institution or be treated at home. After the first six years of life it is but seldom that an idiot can be taken care of properly in a family. The interests of the sick child and of his healthy brothers and sisters, finally the condition of the nervous parents, demand that he should be taken to an institution. If there are epileptic seizures, bromide should be given with or without belladonna, in doses once a day of from two to three or four grams, according to the age. In hydrocephalus one should try lumbar puncture or even cranial puncture. Craniectomy should be practiced in idiotism only when there are indications which would justify trephining in non-idiotic states, as depressions of the cranium or fractures of the cranium. Microcephalus of itself offers no indication.

Thyroid treatment is of value only in cretinic idiotism (which see). The diet in idiotism should be nourishing and non-irritating. Alcoholic drinks should be forbidden, all the more since imbeciles are very often susceptible.

## II. THE FUNCTIONAL PSYCHOSES.

### 1. Delirium Hallucinatorium.<sup>1</sup>

*Delirium hallucinatorium* is a functional psychosis whose beginning and course are characterized by sense deceptions and a considerable limitation of the self-consciousness.<sup>2</sup>

After a short preliminary stage (a few days, up to a week), in which headaches, feelings of anxiety generally, also sporadic hallucinations and especially insomnia exist, the disease manifests itself plainly and may run its course in three different ways.

#### (a) Active Delirium Hallucinatorium.

The patient talks confusedly, is incoherent, and is determined in his actions through vivid and rapidly changing hallucinations, sometimes in several senses, often in all the senses. Now he seems excessively serene and fortunate, kisses and embraces those around him, claps his hands for joy; then he seems very unhappy, curses and strikes whomever and whatever he can reach. Meanwhile there are single exclamations which show a return to consciousness for a short time, as "My head is very much confused." The delusions which are produced are unsystematized; self-accusations and expansive ideas, narratives of fantastic stories of his own life or of those of another whom he connects with himself, are wildly intermingled.

The patient does not know where he is, and knows just as little about the time; he fails to recognize his surroundings or the persons and things around him. Sometimes his excitement rises to raving.

The sense deceptions gradually abate, the patient becomes calmer, and as a rule recovers in the course of a few months.

#### (b) Passive Delirium Hallucinatorium.

The patient lies quietly in bed, or, while fully or partially clad, moves around the room. He speaks little or not at all,

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<sup>1</sup> Hallucinatorisches Irresein (Fürstner). Amentia (Meynert).

<sup>2</sup> Wille. Archiv für Psychiatrie, 1888, xix. Séglas. Presse médicale, 1897, 22. Meyer. Archiv für Psychiatrie, 1899, xxxii, 780.

yet his countenance shows his intentions as they mature; now he smiles, again he seems anxious and frightened, closes his eyes fast, or stares straight ahead. As in the first form, there is an absence of orientation.

From this tranquil form an anxious stupor is sometimes developed. The strained and anxious expression of the countenance shows that depressive ideas force the patient to the unnatural demeanor, and the convalescent relates the horrible situations through which he has passed at the time of his seemingly physical and mental rigidity. More rarely a stupor appears with katatonic symptoms.

(c) In some cases there is an *interchange of the symptoms of the active and passive form*.

### Special Symptomatology.

1. *Illusions and hallucinations.* Visual illusions play a great rôle in delirium hallucinatorium and appear to be the chief cause of the defective orientation. Besides these and the auditory hallucinations of the most diverse forms, the kinesthetic hallucinations are to be emphasized. The patients are disquieted by a rolling of their bodies or by a change of position, as if, *e.g.*, they were at sea; they feel themselves lifted up and lowered in bed, and they think that they are raised to heaven or sunk into the earth, the delusions shaping themselves upon the happening which caused the deception.

The tendency of the hallucinations to change distinguishes the active form, while their stability accompanies the passive.

2. *Delusions.* As already mentioned, depressive and maniacal ideas interchange incoherently in rapid succession. Now the patient is God the Father, now the devil incarnate. At one time he sees everything in heavenly light, at another he believes that everything will be destroyed by fire.

It should be emphasized as of considerable diagnostic importance that no system exists in reference to the connection of the delusions with one another.

3. The frame of the mind corresponds with the contents of the delusions.

4. There is generally a certain degree of *amnesia* covering



the period of the disease. Only the chief events are, as a rule, remembered.

Sometimes a retrograde amnesia appears and a certain period of time, antedating the onset of the disease, disappears from memory.

5. The *self-consciousness* is very much clouded, and in the highest grade of the disease it is entirely extinguished. The hallucinations call forth by their massiveness and their ever-changing images a confusion which belongs to the characteristic symptoms of delirium hallucinatorium. In the meantime there are often sudden, but not enduring, lucid intervals, or clearing up of the self-consciousness: "Where am I?" "I have certainly been demented," and the like.

6. The speech sometimes shows changes which are expressed in verbigeration, in lingual delirium, often in the formation of strange words (*paraphrasia vesana*).

7. As for the physical symptoms, sleep is generally disturbed, the repugnance to the taking of nourishment may reach to sitophobia. With this the pulse and temperature show nothing abnormal. A rise in the temperature of the body awakens a suspicion of physical complications. The tendon reflexes are apt to be somewhat increased, symptoms of an organic disease of the central nervous system are wanting.

*Etiology.*—A large majority of the patients suffering from delirium hallucinatorium are never brought to the knowledge of the psychiatrist, and the disease runs its course in the homes of the patients, in the surgical, internal, or gynecological clinics. Men are more frequently attacked than women. The disease appears especially in the third and fourth decennia of life. Hereditary basis may be considered a predisposing factor, as in most psychoses.

Among the direct causes, infectious diseases and the puerperium (two-thirds of all cases of the so-called puerperal psychoses follow in the type of delirium hallucinatorium) play the greatest part; furthermore, operations, especially abdominal operations, lithotomy, and the like, then traumata which are connected with psychic shock (railway-brain).

The *outbreak* is generally subacute; the *course* has been de-

scribed above. There are rare forms in which delirium hallucinatorium appears periodically.

The *duration* of the disease varies between fourteen days and six months, but it may last over a year and still be cured.

The *results* are:—

1. *Recovery.* Delirium hallucinatorium is by far the most favorable form prognostically of all the functional psychoses. The percentage of recoveries amounts to about 80 per cent.; if the institutions show one much smaller (45 per cent.), it is because the cases running rapid and favorable courses do not, as a rule, enter an institution, but recover at home or in the general hospitals.

2. *Chronic mental disease* under the type of terminal dementia, sometimes with concentration of the hallucinations and delusions into a system, passing into a paranoia hallucinatoria chronica.

3. *Death*, which is brought on by those causes which have called forth the psychosis (operation, trauma, puerperal and infectious diseases), or by injuries which the patient has inflicted upon himself in the stage of raving or has suffered from others, or, finally, by general exhaustion.

*Diagnosis.*—To the diagnosis of delirium hallucinatorium belong:—

1. The proof of a greater or less degree of the clouding of the self-consciousness.

2. The proof of hallucinations which have introduced and dominate the clinical type.

3. The lack of the symptoms of an organic disease.

The *differential diagnosis* must regard:—

1. The delirium of fever. Here the thermometer and the anamnesia are the deciding factors.

2. Intoxication and abstinence deliria. Here the anamnesia and the presence of the characteristic symptoms of the corresponding toxins may confirm the diagnosis.

3. Since the symptoms of delirium hallucinatorium may also appear *intercurrently* with melancholia, with paranoia, in connection with hysteric and epileptic seizures, the independence of the clinical type must be confirmed if one would designate it as delirium hallucinatorium.

4. The active form of delirium hallucinatorium is distinguished from mania by the massiveness of the hallucinations which is foreign to the latter, and by the interchange of maniacal and depressive moods. Further, it does not have the flight of ideas and the mental deviation which are peculiar to mania.

5. In the same way, the passive form of melancholia may be distinguished from the passive form of delirium hallucinatorium by the ever-changing of the phenomena in the latter and the slighter clouding of the self-consciousness in the former.

6. The delusions in paranoia are systematized, but all system fails in delirium hallucinatorium.

7. Externally, the immobility in acute dementia may compare with that which one finds in the passive form of delirium hallucinatorium. Yet the expression of the countenance and the negativism, which latter is often present in delirium hallucinatorium, are contrary to the behavior of the acutely demented, in whom the expression of the face is completely void, and whose behavior to the external world shows absolute indifference.

8. From the delirium of collapse (H. Weber), the active form of delirium hallucinatorium is distinguished only by the peracute beginning of the former and its rapid course, which often leads to death. The clinical pictures are the same in their essential features.

So-called acute delirium begins with fever, while delirium hallucinatorium shows a rise in temperature only when complications appear.

*Treatment.*—In the majority of cases, especially in the active form, it is advisable to transfer the patient to an institution. On account of the sudden changing of the symptoms, care in a private dwelling is not expedient. In the passive form, also, care at home will be very difficult on account of a possible sitophobia.

If the patient is secure in an institution from injuries to his own person through the hands of others or himself, one should the rather abstain from over-medication, since experience teaches that this disease generally terminates in recovery without medicines. Rest in bed and non-irritating food are de-

manded above all else, while lukewarm packs or prolonged baths are advisable.

Continued insomnia is combatted by one or two glasses of beer or a glass of heavy wine. Hypnotics are often of little value in ordinary doses, but rather excite the patient; sleep and rest may be produced transitorily by using *duboisin* in doses of one-half to one milligram. If there is obstinate sitophobia, one should use the esophageal sound and nourishing clysters. Where weakness of the pulse and superficial respiration continue in the stuporous form, camphor injections are recommended, and saline infusion may be used in conditions of collapse.

## 2. Mania.<sup>1</sup>

Mania is a functional psychosis which is characterized

1. *By a pathological acceleration of the efflux of ideas.*

2. *By a heightened excitability of the motor centers of the brain.*

We distinguish four stages in the course of *typical* mania:

1. The *initial stage*, which is distinguished by depression, heaviness in the head, loss of appetite, and insufficient sleep.

2. The *stage of exaltation*. The disturbances of the initial stage disappear after a week or two, but the sleep remains poor or defective. The associations succeed each other rapidly, and freed from the normal inhibition, ideas come to the patient abundantly and without exertion; writing is easy for him, wit and poignancy bubble forth involuntarily. The free play of ideas makes it easy for the patient to make great plans for the future, to enter into new undertakings, and ideas of overestimation are developed with the disappearance of former mental restraint. Corresponding to this, his frame of mind is full of hope, joyful, he jests freely with others, and from his happy disposition there develops a great inclination to amuse himself, to seek barrooms, theaters, public houses. The lack of inhibition makes the maniacs in this stage very disagreeable inmates for those around them in an institution, from the recklessness of

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<sup>1</sup>Derived from *μανία*, meaning frenzy—*μανικός*, raving. Mendel, Monograph. Vienna and Leipzig, 1881.

their treatment of others, and the exposure of their weaknesses and irregularities. The heightened motor excitability shows itself in their bright, sparkling, but restless eyes, in a lively play of gestures, in the tireless movements of the fingers and hands in severer grades, by their propensity to play the vagabond.

The entire condition is similar in the milder grades to that of drunkenness, with which it is often confounded.

In its further course the accelerated efflux of ideas reaches to the flight of ideas;<sup>1</sup> the patient changes from hundreds into thousands; the coming idea does not reach its culmination before a new one comes into the consciousness, thereby causing the state of maniacal confusion. It is possible, however, to hold the patients even in this state, and for them to report with sufficient accuracy as to their situation, person, and wishes.

3. The *stage of frenzy*. The exaltation rises to raving, the patients scream, sing, dance, break windows and doors, tear their clothing—and although a part of these violent actions are called forth by resistance to the limitation of their freedom, others are wholly the product of the heightened excitability of the psycho-motor regions. Megalomaniacal ideas are mostly recognized in their tumultuous speech. Finally, the patient becomes, in consequence of constant outcry and screaming day and night, hoarse and scarcely comprehensible. The dullness of their sensory feelings is shown in their insensibility to heat and cold, their defective need of food and drink, the absence of fatigue, which enables them to rave for days or weeks without a pause.

4. The *stage of decline*. The restlessness decreases; above all, sleep returns for some hours; the sense deceptions, which were present in the third stage, fade away, the patient gradually passes over into convalescence, quite often so that a certain slight depression, a foolish loquacity (*moria*) forms the transition. If recovery does not follow, a chronic condition of mania with weakening of the mental powers may develop, or death comes in the stage of frenzy by exhaustion or complication with

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<sup>1</sup>Aschaffenberg. Experimentelle Studien ueber Associationen. III. Theil. Ideenflucht aus Kraepelin's Physiologische Arbeiten IV., 2, 1902.

other diseases (pneumonia), or in consequence of injuries (with septicemia).

Sometimes after the decadence of the maniacal excitement a melancholia develops, and a definite recovery first appears after the end of this without further development of a circular psychosis.

### Varieties of Mania.

1. *Hypomania* (Mendel), the mildest degree of mania. The disease remains stationary at the summit of a medium degree of exaltation, where a certain self-control is still present, which allows the patient to appear transitorily calm and reasonable. Sometimes the accelerated efflux of the ideas and the mental change in the individual are only recognized by those who make a comparison of his previous normal condition to that in which they find him now. Many of these cases have been described as reasoning insanity or mania without delirium.

2. *Recurrent mania* (Wittkowski), two attacks of mania separated by an interval.

3. *Mania Gravis*. In the raving stage of a mania in which the disease comes on after a brief period of development, spasms appear (gnashing of the teeth, twitchings in the face). A continuous fever develops, with lively acceleration of the pulse, the temperature rises to 106° F. and higher, death ensues through collapse. We have here a complication of mania which, as a rule, arises by infection followed by septicemia after a trauma received during the state of raving. Some of the cases of acute delirium belong here.

4. *Periodical mania*. The previously described type of mania may appear periodically. The development of the attacks is usually very rapid. After short states of anxiety, which sometimes rise to precordial anxiety, after neuralgiform pains—sometimes in limited nerve regions—the attack develops in a few days with insomnia and soon rises to its full height. It may show the type of hypomania, that of typical mania, also with heightening to frenzy. If the single attacks are similar in their nature and intensity, even to the slightest particulars (photographic faithfulness), nevertheless attacks with essentially different types of the disease may appear between these at intervals.

Generally the interval is quite long at the time of the first development of the periodicity, but gradually the intervals become shorter and lose in purity.

### Special Symptomatology.

#### 1. *Anomalies of the psychic functions.*

*Hallucinations* are prominently present only in raving states, and then especially in the visual sense; illusions, on the contrary, especially in the sense of vision, are frequent in the stage of exaltation. The hallucinations themselves show a great motility and an easy changeability. Hallucinations of taste and smell are rare (in the stage of frenzy).

The feeling of disease is as a rule wanting or only appears at intervals transitorily.

The fact that during the pathological condition bodily infirmities which had been previously present are not felt (cortical anesthesia of the coenesthetic and of the kinesthetic and temperature senses, feelings of hunger and thirst) often cause the patient to say that he has never felt so well in his life.

The heightening of the sexual impulse in typical mania and in hypomania is connected with this feeling of pleasure which expresses itself in onanism, satyriasis, nymphomania, in equivocal or immodest expressions in good society, in the presence of women, and similar indecent offenses.

The feelings of judgment, especially the ethical, are generally weakened or have disappeared.

Maniacs undress themselves completely without feeling shame, young girls of the best society utter expressions which one would never think had come to their ears. Lèse majesté, thefts, and the like in the maniacal condition rest on the loss of such feelings.

The anomaly of *thought* has essentially in mania an acceleration of the efflux of the ideas for its point of departure; it leads direct to the flight of ideas (see Aschaffenburg, l.c. 139). But what the associations gain in rapidity they lose in depth and acuteness. The rapidity pushes aside or renders impossible the intervention of contrasting ideas, and thereby criticism. On this defect, also, rests the fact that such patients identify similarities from unimportant indications (delirium palingnesticum).

From the rapidity with which the associations are perfected, the laws governing them are violated, the connection of ideas does not take place on a real basis, but after external signs, often from the sound of syllables and words (alliteration, assonance, association of sounds). Speech rises from polyphrasia to a senseless delirium of the tongue. The tongue cannot follow the superabundance of ideas, words are swallowed, and in consequence the patient seems to be more confused than he really is.

Maniacal confusion is characterized not only by the patient's breaking away from the most senseless discourse, as remarked above, and then being in a condition to answer intelligently, but also to recite without ulterior motive a long poem without mistake, or to give a detailed narrative of his life.

The delusions which are of expansive nature are in the beginning essentially ideas of the overestimation of one's self (mania ambitiosa), and rise later to megalomaniacal ideas without reaching the nonsensical delusions of grandeur so characteristic of paresis.

The *memory* in many cases shows extreme retentiveness (hypermnnesia), so that the patient can reproduce events from his earlier life which he would be unable to do normally.

If in general the *disposition* of the patients, corresponding to the unrestrained feelings, is serene and joyful, it may also be, on the other hand, irritable and irascible contemporaneously, especially if they cannot have their way. One often observes a rapid change of the disposition, immoderate laughter and loud weeping alternating.

In the *somatic* functions the most striking are the heightening of the motility, the unrest of the whole body, the heightened powers, which should not be ascribed to an actual increase of strength, but which only result from the absence of the normal feeling of fatigue (see the maniacal expression of the face).

The *body weight* diminishes considerably, increases with the beginning of convalescence, but is wont to increase no further with perfect recovery, sometimes even decreases. In periodical mania one may sometimes diagnose the approach of the attack by the rapid decrease in the weight (Fuerstner). The urine shows a decrease in the phosphoric acid.

*Etiology.*—Mania is a rare mental disease. It takes the



last place in the functional psychoses beside acute dementia in point of frequency. It is especially observed at from fifteen to twenty-five years, equally frequent in both sexes. It may also appear in children and old people.

In regard to the *hereditary* basis, it has the same proclivities as the other functional psychoses. Traumata, cardiac defect (mania cardiaca) may be emphasized among its special causes.

Why mania appears only once in a lifetime in one case, never to return, and in a great number of other cases the disease takes a periodic course, is inexplicable.

The *outbreak* of mania is seldom sudden, except the attacks of periodic mania, which sometimes develop rapidly. The *course* of the disease shows numerous remissions and exacerbations, both in its development as well as in its decadence. The duration varies between three and nine months. For transitory mania, see transitory mental disturbances.

The results are:—

1. *Recovery*, which is reached in four-fifths of all the cases.
2. *Tendency of the disease to return*. Relapses may appear in the same clinical type or as melancholia (which see).

3. *Imperfect recovery* (recovery with a defect), where a certain change in the patient, a certain greater irritability, and, on the other hand, a certain lack of energy with a slight weakening of the mental powers remain.

4. *Terminal dementia*. While the delusions of raving become less, the patient becomes calmer, but the mental power and with it the memory generally remains considerably impaired. In many cases there remains also in this chronic condition a certain inclination to heightened excitement and to maniacal exaltation (chronic mania).

5. *Death*, which may be conditioned, first, by diseases from which the mania has arisen, as, *e.g.*, by heart disease; second, by *wounds* which the patient has inflicted upon himself while raving or has suffered from others, with pyemia or septicemia following; third, by *exhaustion*.

*Diagnosis*.—The essential characteristics of mania are: 1, the accelerated efflux of the ideas; 2, the motor unrest; 3, the absence of symptoms which confirm an organic disease of the brain.

A differential diagnosis must be made from:—

1. The maniacal stage of paresis. Here the disturbances of speech, the reflex rigidity of the pupils, changes in the tendon reflexes, and, generally, a settled condition of mental weakness are of decisive significance against the assumption of a mania.

2. Maniacal excitement in intoxication. Here the anamnesia and the special changes, which the various toxins in the body call forth, are decisive.

3. Raving states in hystericals and epileptics, which are distinguished by their acute and peracute beginning, generally in connection with seizures.

4. Delirium hallucinatorium (which see).

Whether a maniacal excitement belongs to a periodic mania or to a circular psychosis can be determined with certainty only by the anamnesia or its further course. In general, a remarkably sudden onset, with precordial anxiety or neuralgiform pains, a rapid rise to the height of the disease though running a mild course, an exaltation not mounting to raving, lack of confusion, and a very considerable mental deviation even with great excitement speaks for the periodic or circular form.

*Prognosis.*—The prognosis of mania may be called favorable. It is unfavorable in periodic mania, yet here remissions appear which may be of so long duration that one might well assume recovery. Sudden cessation of the maniacal excitement is an unfavorable symptom prognostically; it points to a circular or periodical course.

*Treatment.*—The diagnosis of “mania” should, as a rule, be followed by the commitment of the patient to an institution, both for his own interest and that of the community. If he is left to himself he will aggravate the disease by misuse of alcoholic drinks and a dissipated life, and will squander his means by needless expenditures. By the recklessness of his conduct he will become dangerous to others. If he is in an institution the expectant method of treatment is to be recommended. Rest in bed and wet packs will generally be sufficient; if raving comes on, isolation in a dark room will be required; transiently also in continuous raving excitement the employment of chloral hydrate and duboisin cannot be dispensed with. Opiates seldom exercise a really soothing influence.

In periodical mania one may try bromide of potash in large doses, 8 to 10 grams daily. In sporadic cases I have seen results from subcutaneous injections of ergotin. Atropin injections are recommended by Hitzig in the intervals between the attacks in doses of 0.0001, 0.0002 to 0.0003.

### 3. Melancholia.<sup>1</sup>

*Melancholia is a psychosis whose basis and point of departure lie in a pathologically heightened painful excitation of the psyche.*

#### (a) Simple Melancholia. Hypomelancholia (Ziehen).

A condition of sorrow appears, with or without any considerable cause founded upon the external relations. Past, present, and future appear to the patient in gloomy colors.

One of my patients designated his condition as identical with that described in Wilhelm Meister: He had not taken the least interest for years in what was foreign to himself, had almost observed nothing; simply self-absorbed, he had perceived his vacant, empty Ego, which seemed to him to be an immeasurable abyss. How touching it was when he spoke of this sorrowful condition! "I see nothing before me, nothing behind me," he exclaimed, "but an eternal night, in which I am in the most horrible solitude; no feeling remains except the feeling of my sin, which is only perceived as a distant, formless specter behind me. Yet there is no height, no depth, no forward, no backward; no word expresses this condition, which is always the same."

This sorrowful disposition takes from the patient the possibility of ordinary activity, and this idleness is the cause of new reproaches against himself. The patient feels himself obstructed, and by this even his thought is retarded; it is difficult for him to make a resolution, to rouse himself; coincidently, there exists, as a rule, obstinate insomnia, lack of appetite, and marked intestinal inactivity. In some cases the moral qualities of the patient occupy his mind chiefly. What he has done and what he has not done cause him anxiety about the performance

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<sup>1</sup> From μέλας, black, and χόλος, gall.

of his duty. In other cases, his physical condition and what it will be in the future form the essence of the anxiety; hypochondric complaints, fear of insanity, of tabes dorsalis, and of other diseases occupy him entirely. With this, self-reproaches are not wanting: "If I had done otherwise, if I had been more careful, it would have been different."

Such states may last from three to five months, sometimes longer; show many variations in their intensity, are generally worse in the morning than in the evening, and gradually lead to recovery. They have a great tendency to relapses, and also appear periodically.

### **(b) Typical Melancholia.**

The pathological change of the feelings may affect: 1, the sensorial feelings; 2, the moral feelings; 3, both; and we distinguish, therefore, a hypochondric melancholia, a moral melancholia, and a general melancholia.

#### *1. Hypochondric Melancholia.*

(a) Stage of depression. Fear and anxiety for the present and future condition of the body and spirit dominate, as has been mentioned in hypomelancholia. In this stage determined self-accusations are generally observed.

(b) Melancholic stage. The patient no longer controls himself in expressing his hypochondric complaints, but, with vivid self-accusations of preceding onanism and syphilis, of dissipated living, and other excesses, the hypochondric feelings have become excessively fortified and encouraged up to a hypochondric mania. He has perceived everywhere the symptoms of the destruction of his body by syphilis, his entrails are rotten, and the like.

The further course is correspondingly the same for the various forms.

#### *2. Moral Melancholia.*

(a) The stage of depression. This stage shows essentially the symptoms of a hypomelancholia, general discontent, vague fear, retardation of the efflux of ideas, thoughts of death, and also ideas of self-destruction. At times during this stage, sud-

den heightenings of anxiety are observed, which manifest themselves in *raptus melancholicus*.

(b) Stage of melancholy. The patient has discovered the cause of his sorrow, he accuses himself of having lied, of having perjured himself, he has not done his duty towards God or man (delusion of transgression). Not only will he meet divine punishment after death, but he will be imprisoned here for his sins; he hears the police coming, hears the clanking of the chains. In contrast to the complaints made in hypochondric melancholia, these patients consider it foolish if the physician wishes to see the tongue, if he feels the pulse, since in general they cannot suffer from physical disturbances. The external behavior of the patients in this stage is either calm, perfectly quiet, or filled only with uniform whimpering and sighing (passive melancholia), or it is expressed in loud shrieks, lamentations, constant groaning, amid which they may attempt violent actions against themselves, tearing their clothes, tearing out their hair, and similar acts (active or agitated melancholia). At the height of this sorrowful disposition, which begins with anxiety, there is in a number of cases an anxious raving; in other cases, an anxious stupor.

### 3. *General Melancholia.*

The pathological ideas of hypochondric melancholia and moral melancholia are associated. Sometimes the hypochondric ideas come first, while the delusion of transgression follows later.

The disease, the destruction of the internal organs, is the wrath of God for all sins committed. In other cases the delusion of transgression appears first, after which the hypochondric delusions follow, since God punishes them for sin. In other cases both series of ideas develop contemporaneously in intimate connection.

The conditions described in the three different forms may gradually, with attenuation of the symptoms, pass over into recovery, sometimes with a transition stage in which a pronounced homesickness develops, especially if the patient is far from home. In other cases, with the fading out of the delusions and sense deceptions, a state of mental weakness may develop

in which the earlier depressive state is still reflected with its pathological ideas. Finally, death comes by suicide in a certain number of cases; in others, by exhaustion, especially in consequence of sitophobia; in others, by diseases appearing in the internal organs, among which tuberculosis is most frequent.

Under the influence of puberty, sometimes from other unknown causes, the course of melancholia, especially its hypochondric type, may be peculiar and quickly pass into dementia. Here belong a considerable number of the cases of hebephrenia and katatonia, whose frequent result is dementia præcox. In this, sometimes, the suffering and persecuted heroes of whom the patient has read in stories and romances, and with whom he childishly identifies himself, play prominent rôles.

### **Special Symptomatology.**

1. Illusions and hallucinations. These are absolutely of an anxious nature in melancholia, frequently blaming and threatening the patient, and have, as a rule, a more or less fixed character. Hallucinations are wanting in the depressive stage, but are abundant in the melancholic stage. The patients see the fire in which they are to be burned, the devil who will become their master. They hear the lamentations of their children, the steps of policemen who wish to take them into custody; they smell and taste poisonous substances, which are destined for their destruction as a punishment for their evil deeds. In the hypochondric form the hallucinations of the cœnesthetic sense, especially, portray the clinical picture of the melancholic stage. The patients feel that their heads are of glass, their arms of wood, their intestines rotten, their stomachs sunken in, the anus closed, the sexual organs withered or drawn up into the abdomen.

2. The retardation in the course of ideas is characteristic of melancholia. The entire psychic condition becomes monotonous thereby. The delusions are of a depressive nature. They are partially connected with the momentary hallucinations, and interpret them anew according to the present occurrences. But, as a rule, the past also is newly interpreted in accordance with the existing depressive ideation, especially in the sense of self-accusation. In hypochondric melancholia the ideas are di-

rected to the sensation of the pathological change or annihilation of the organs; in the moral form, the patient believes himself materially ruined and morally dishonored. With these depressive ideas self-accusation and the delusion of transgression stand in intimate association. Ideas of persecution develop in consequence. The patient considers the persecution a just punishment for his actions.

As a result of the insane comprehension of the Ego, arises the delusion of poverty, the delusion of being deserted, which is observed very frequently in the senile form of melancholia.

In many cases of melancholia, a delusion of negation arises. The patient has no stomach, no rectum, no blood left, he does not exist; besides this, no man exists, there are no houses left. All these sense deceptions and delusions heighten the fear and anxiety originally present. Sometimes the excesses of the melancholiacs are expressed as *micromania*, "they wish to cut off each of my members separately," "I have committed all the sins in the world," and so forth.

3. The anomalies of the feelings, which represent the primary affection in this disease, sometimes appear in the later stage of the disease, so that, with the psychic pain present, there is an anesthesia of the feelings in regard to those persons who at first were best able to calm them (*anesthesia dolorosa*).

4. The memory is not destroyed, but the reproduction is slow, as well as every other psychic activity. With rare exception there is a good recollection for what passes during the disease.

5. The speech, like thought and action, is slow and sluggish. The lips move very little, the utterance is scarcely audible. In other cases only broken sentences are uttered, interrupted by sighs and groans. Sometimes the patient is wholly speechless, either on account of anxiety or incapability of associating the words, or because delusions or sense deceptions, or both, prohibit speech.

6. In regard to action, negativism and passive resistance are opposed to everything the patient essays to do. Sitophobia may sometimes be ascribed to this condition. One should not be deceived by the calmness of the patient. It may be that he has not made a movement for a month, but lain in bed all the

time, yet he may rise suddenly when unwatched and commit suicide with the greatest energy.

*Suicide* plays the greatest part in the most diverse forms of melancholia. The impulse is sometimes so strong and so fills the whole spiritual life that some have spoken of a suicidal melancholia. In the same way self-mutilation often appears with melancholiacs. (For the motives for suicide, see suicide under results of the psychoses). In *raptus melancholicus* violent actions towards others are rare.

7. Insomnia, loss of appetite, and repugnance to nourishment are the most constant physical symptoms. The face shows spasmodic contractions in the superior facial region, while the inferior facial region appears lax, the corners of the mouth droop, the mouth is open and saliva trickles therefrom, and the face is directed to the ground. The tongue is only slightly protruded, eating is slow, the food or drink taken into the mouth is slowly moved about before swallowed. The movements of the arms are labored and difficult, the patient takes short steps in walking. The muscles often seem lax, sometimes hypotonic; in other cases there is abnormal tension. With the tension is connected quite often the condition of *flexibilitas cerea*. In regard to the vasomotor nerves, it should be mentioned that in melancholia there is, as a rule, an arterial hypotension. There is a general feeling of coldness, hands and feet feel cold and show a certain degree of cyanosis. The patient weeps readily, usually without tears. *Precordial anxiety* is to be attributed to the affection of the vasomotor nerves which generally accompanies melancholia from its beginning. The state of *raptus melancholicus* is designated as an expression of the *precordial anxiety* with a violent outwardly demonstration.

In melancholia the pulse is apt to be small and slow, the number of respirations is diminished, the tongue seems dry, gums and lips are often covered with fuliginous fur.

The stomach often shows an excess of free hydrochloric acid, the urine is diminished both in quantity and in the solid contents. The earthy phosphates are increased in quantity. The menstruation frequently ceases during the disease, returns with the beginning of convalescence, but sometimes first reappears with recovery. The temperature of the body is subnormal,



sometimes with the type inverted. The weight of the body in melancholia generally decreases very considerably.

*Etiology.*—Of all the functional psychoses, except delirium hallucinatum, melancholia is the most frequently observed. It appears oftener in women than in men. The age of greatest incidence in both men and women is between twenty and thirty years; then in women forty-five to fifty, and fifty to sixty in men. Puberty often disposes to melancholia and is frequently, also, the cause of an abnormally unfavorable course of the disease. The same is true of the beginning of old age, while senile melancholia often passes over into senile dementia. Psychic depressive influences play a considerable part among the direct causes, but those which at first cause joy may be injurious in the predisposed. Thus it sometimes happens that women engaged to be married have outbreaks of melancholia, and lament that they will be unable to fulfill marital duties because they do not love their future husbands. In men, especially, under such conditions there are melancholic complaints over youthful sins, hypochondric anxiety whether they are potent, and the like. In the same way, melancholia quite often develops soon after the wedding, even on the wedding night. Puerperium, disturbances of the abdominal organs, onanism, spermatorrhea, with their weakening influences, may become the causes of melancholia.

The *outbreak* of the disease is generally gradual, very exceptionally sudden. The disease follows the same gradual course, with exacerbations and remissions, in the process of recovery. There is also a *periodic melancholia*, which appears frequently in the form of simple melancholia and returns in many patients each spring or fall. Many of the cases which are described as periodic manias show the symptoms of a melancholia on closer analysis.

*Remittent* melancholia is a chronic melancholia of slight intensity of symptoms, with renewed severe attacks of the disease at intervals.

The *duration* of the disease is seldom under three or four months; developed forms do not reach recovery till after nine months or one year. Some cases last several years and then are cured.

*Results:—*

1. Recovery. Simple melancholia, as a rule, terminates in recovery, but often there are relapses. Typical melancholia is cured in about 60 per cent. of all cases. Recovery is reached gradually; exceptionally, very suddenly. Relapses of a psychic disease, sometimes after ten years and later, are frequent; they generally follow under the same clinical type; sometimes, also, as mania.

2. The transition to a secondary state—chronic melancholia, terminal dementia.

3. Death, especially by suicide; exhaustion or tuberculosis.

*Diagnosis.*—To the diagnosis of melancholia belong: 1. Depressive disposition. 2. Psychic inhibition. 3. Self-accusation. 4. Absence of all symptoms which point to a complicated psychosis, to an intoxication or an organic psychosis.

For the differential diagnosis there should be considered:—

1. Paresis. In its depressive stage or depressive type the portrait of the mental condition may be similar to that of melancholia. Disturbances of speech, condition of the pupillary reflexes, and paralytic attacks confirm the diagnosis.

2. Paranoia. The paranoiac may express his delusions in the same manner as the melancholiac. But the paranoiac believes that he is persecuted because certain men are hostile without his having given them adequate cause, or because they fear him. He opposes his persecutors. The melancholiac considers the persecutions justified, often, it may be, too cruel, but sometimes not severe enough for his misdeeds.

3. Delirium hallucinatorium (which see).

4. Whether the melancholic condition is a partial phenomenon of a circular psychosis, or whether it belongs to a periodic melancholia, can be absolutely determined only from the anamnesis or the course. Very mild melancholiacs awaken the suspicion of periodicity.

5. Melancholiacs dissimulate quite often, especially in order to deceive those around them, to avoid the strict watch, or to escape from the institution and then to commit suicide. An accurate examination, and especially watching the patient during the night, will guard against such deception.

*Prognosis.*—The prognosis is favorable in simple melancholia, although relapses and periodicity are to be feared. According to the percentage of recoveries given, the prognosis of typical melancholia is not unfavorable. It grows considerably worse if the melancholia takes the course of a katatonia.

*Treatment.*—The most vigilant watching of the patient is necessary as the first step in the treatment of melancholia. If this is possible by the favorable conditions surrounding the home, one may treat the melancholiac there, assigning him an isolated room and letting him lie in bed suitably guarded. These conditions do not exist in the homes of the masses, and on that account the patient should be taken to an institution. But whether he is at home or in an institution, the first care should be to cheer him up, since, where the diagnosis is "melancholia," there is a suspicion of self-destruction, even if the patient has expressed nothing of this kind, and, consequently, the most constant watching is required, and the patient must not be left alone for even the so-called "instant."

In hypochondric melancholia the most accurate examination of every organ must precede any line of treatment, and due consideration of pathological changes of the organs should be made an essential part of the treatment.

Moreover, rest in bed, good nutrition, packs, protracted baths, are powerful remedies in all cases.

For a long time the opium treatment in melancholia has been in good repute (Ziehen. *Therapeutische Monatshefte*, 1889). One may even increase the dose gradually to 1.0 g. per day. In other cases morphine injections act better, beginning with 0.015 and increasing to 0.03, even to 0.06, three times daily. If vomiting takes place with the morphine injections, small doses of atropin may be added. With this there should be given with each meal a few drops of hydrochloric acid to prevent the diminution of the hydrochloric acid secretion of the stomach.

In passive melancholia sometimes it may be well to use spiritus vini rarissimus in teaspoonful or tablespoonful doses, several times daily (Mendel, Obermeier). One may give as a hypnotic trional, paraldehyde, and, in very obstinate cases, chloral hydrate. From the great number of other remedies which are recommended, as, *e.g.*, digitalis, phosphorus, hellebore,

not much is to be expected. One should combat sitophobia with nourishing clysters and the esophageal sound.

Although dismissal from the institution should take place when the patient has recovered, and especially when convalescence is shown by a considerable permanent increase in the body-weight, there are cases in which melancholiacs, who have very pronounced homesickness, may be sent home tentatively under very strict surveillance. In such cases recovery often sets in very suddenly.

#### 4. Circular Psychosis.<sup>1</sup>

In a certain number of cases the mental disease appears composed of two contrasting types of conditions, the maniacal and depressive.<sup>2</sup> Permanent recovery may follow such a disease; the same type, or only a mania or melancholia, may appear in a relapse; it may also appear as the relapse of a mania or melancholia, a manic-depressive insanity.

Only those psychoses which show melancholic depressions and maniacal exaltations in a more or less regular interchange are designated as *circular* psychoses; furthermore, as *intermittent*, when there is an interval between the single phases of the disease, and as *continuous* if there is no such interval. The continuous form of the disease often develops from the intermittent in its further course. One may speak of *cyclothymia* (Hecker) where the melancholic and maniacal stage appears in the very mildest form. For the rest, all degrees of development of mania and melancholia are shown in the maniacal and melancholic stage of circular psychosis.

In the majority of cases the circle begins with melancholia, after it has sometimes been preceded by an aura with paresthesias, gastric disturbances, insomnia, sometimes sporadic trophic disturbances, as, *e.g.*, herpes. In other cases the aura consists of a great desire to sleep, general depression, palpitation

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<sup>1</sup> Hoche. Ueber die leichteren Formen period. Irreseins. Halle, 1897. Pilez. Period. Geistesstörungen. Jena, 1901. Ziehen. Neurologisches Centralblatt, 1896.

<sup>2</sup> Kahlbaum's psychosis typica; manic-depressive insanity, Kraepelin.

of the heart, pains in the back and elsewhere. The depressive stage is generally strongly developed, sometimes so strongly that the maniacal stage is misconceived as pathological and thought of only as a physiological reaction, as a removal of the weight which burdened the patient during the stage of melancholy. But the manifold activity, the great agility, the inclination to all kinds of undertakings cannot be regarded as normal, because the patient is continually heeding an impression which flashes before him at intervals and warns him that he is again to become diseased.

Besides this, there is also regularly an abnormal irritation in this stage of mania. In other cases the maniacal stage is very clearly defined, but it very seldom rises to raving excitement. Sometimes the change between the various phases is brought about in a night. The patient goes to bed depressed, with wrinkled, careworn face, with his hair dry and lying close to his head; he arises in the morning joyful and serene, with glistening eyes and his hair in locks; he has passed from the melancholic to the maniacal stage. In other cases the transition is completed with variations, so that the opposing impulses obtain the mastery of the patient at different times (mixed forms). Although the various attacks in their further course are alike in duration and intensity, sometimes even show photographic faithfulness, yet, on the other hand, the type in the different attacks is quite often very dissimilar. Sometimes a melancholia precedes the circular psychosis; the first is cured, and after a year or even after several years the circular disease appears.

In regard to the special psychic phenomena in the melancholic and maniacal stage, compare mania and melancholia.

It is important to state here that both the expansive delusions of mania and the depressive ones of melancholia in the circular psychoses very seldom rise to the same degree as those in typical cases of mania or melancholia; yet both maniacal raving and anxious and katatonic stupor appear.

Hallucinations appear in sporadic cases, but are not frequent.

Sometimes the melancholic delusions are mixed with the paranoic, and the depression seems to be partly brought forth

as a reaction from the persecutions to which the patient thinks he is exposed.

It may be mentioned in connection with the physical symptoms that sphygmograms have shown that a heightened tension of the arteries exists in the depressive stage, with diminished activity of the heart, while in the maniacal stage there is a rapid, steep ascent, very sharp crests, and more or less well-defined diastole. The respiration is accelerated in the maniacal stage, while it is diminished in the melancholic. During the pathological psychic condition the urine shows indican, acetone, diacetic acid, which constituents disappear in the interval. Sometimes the excretion of these substances precedes the attack (Pilez). • Menstruation is seldom altered in circular psychosis.

*Etiology.*—Circular psychosis seldom appears after the thirtieth year, but generally in the second or at the beginning of the third decennium of life; it is more frequent in women than in men and shows a greater percentage among those hereditarily tainted than do the other functional psychoses. It must be regarded as an exception if, with a circular psychosis, the appearance of some mental disease cannot be shown repeatedly in that family.

The duration of the single attacks or the phases of the attack is singularly varying. Sometimes there is a daily type, sometimes the single types occupy the space of from three to six months, and even longer.

*Results:*—

1. Recovery is very rare; weakening of the intensity of the single phases is oftener observed.

2. Transition into dementia is an exception. There are cases of circular psychoses continuing in the full strength of their powers of reproduction and ideation to the most advanced age.

*Diagnosis.*—Circular psychosis may be mistaken for:—

1. The circular form of paresis. Here the physical symptoms, especially the presence of paralytic attacks, are decisive.

2. Circular-epileptic insanity on the basis of epilepsy. Here the classic epileptic seizures or the epileptic equivalents will assure the diagnosis.

3. Melancholia or mania in corresponding stages (which see).

The *prognosis* is unfavorable for recovery, yet interruptions of the disease for many years may appear.

*Treatment.*—Against the reappearance of the attacks one may use bromide, atropin, ergotin as in periodic mania (which see). One combats the single phases, the maniacal exaltation, and the melancholic depression, according to the principles underlying these conditions.

## 5. Paranoia.<sup>1</sup>

While the *primary element* in mania is the acceleration of the efflux of the ideas, in melancholia, hyperesthesia and neuralgia of the feelings; in paranoia, the disturbance of the laws of association appears as the primary element, *in that either one of these laws obtains the mastery over the others, or the connection of the ideas is not perfected according to the laws of normal association.*

### (a) Rudimentary Paranoia (Morselli), Imperative Concepts.

Imperative concepts may consist:—

1. In an idea or a certain series of ideas coming into the foreground of the consciousness so that all others are relegated to the background.

Either this occurs continually or appears only on certain occasions. There are patients who are incited to the most diverse calculations, as multiplying, dividing, extracting the square root of the numbers seen on houses, coaches, railroad cars, automobiles (arithmomania). Moreover, certain numbers are often connected with a peculiar signification (the number 13). In others, it is certain words, definite images of the memory, which constantly reproduce themselves and from which the patient cannot free himself. Thus there are persons who cannot rid themselves of the thought that others are behind them. One

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<sup>1</sup> Ziehen. Archiv für Psychiatrie, xxiv. Cramer. Zeitschrift für Psychiatrie, vol. 51. Mendel in Eulenburg's Realencyclopädie, 3. Auflage Werner. Die Paranoia. 1891.

of my patients was constrained to imagine, whenever a person entered the room, how well the naked feet of the visitor would look, whether they were clean or dirty. A young lady of twenty-one years could not escape the idea that she would have a child, because a man had dragged her away in her sixth year.

2. Imperative concepts may arise because the associations perfect themselves with special predilection and vigor in one or another of the laws of association. While similarity, coexistence, and succession preferably rule the procession of the associations in the thoughts of normal beings, in pathological states associations otherwise evolved may obtrude themselves.

(a) Imperative concepts by the insistence of *contrasting associations*. While praying, the patient curses to himself; he pictures the sexual parts of the Virgin Mary while praying to her; while at the theater he debates whether he should not call "fire," or snatch the rifle of the sentinel as he passes by.

Contrasting thoughts then lead him to *extreme skepticism*. Whether, although he has extinguished the light, a spark may not have fallen somewhere near, whether the door has been locked, whether he has not written "no" instead of "yes," whether the letter has not fallen beside the post-box, whether he did not steal something which was said to have been stolen, whether he has not been guilty of *lèse majesté*, whether in the paper thrown away there may not be cause for accusation. Sometimes the fear occurs that the patient may betray himself by blushing (erythrophobia), and he very often actually blushes. Sometimes, as in the phobias, there is connected therewith the dread of touching objects, not from a hypochondric fear of becoming infected, but from fear of placing poison or something else injurious thereon, and injuring others in this manner.

(b) Imperative concepts arise while the associations are perfected, preferably after the association laws of cause and effect (metaphysical mania). One can distinguish here: —

1. The metaphysicians: Why has God created the world? Why does immortality exist?

2. The realists: Why do the people in the basement have no window shutters? Why are they not afraid of burglars? Why do men have two legs, and not four? Why are leaves green, and not blue? If I should think of stabbing my mother, would it



do any injury if I only think it, or does it not injure if I do not do it?

This pathological condition may appear externally as *morbid curiosity* (phrenolepsia erotematica, Meschede).

In all these states there is full consciousness of disease.

Hallucinations do not appear with these imperative concepts. Disagreeable, disgusting feelings, which many patients recognize as unendurable anxiety, pathological mental processes, caused through the fear that they will lead to the "loss of reason," regularly accompany these states.

Sometimes imperative concepts lead to actions of an impulsive nature; but these last consist mostly in ejaculating words which correspond to the surging ideas and are often nonsensical (onomatomania), sometimes the last are of an indecent nature (coprolalia) in connection with spasmodic ties in the motor apparatus. The fear of such things often cramps their intercourse with other persons; the patients are afraid of going to church, to the theater, even on the street. The complete mastery of the patient by the concepts may bring him to the condition, transitory or permanent, of not being able to perform the duties of his occupation; in severe cases, getting up and dressing himself is very difficult; everything consumes a great deal of time.

*Etiology.*—Rudimentary paranoia arises, in the majority of cases, from twenty to thirty years of age, but sometimes may appear in children. The hereditary basis is the most important predisposing factor.

As a rule it affects men who from youth up, even in school, have been earnestly endeavoring to make their lives difficult.

The principal cause for the outbreak of the disease is found in many cases in a sudden severe shock to the mind, or continual grief, sometimes by physical and mental overexertion with consequent exhaustion and insomnia.

The *appearance* is sometimes very sudden, but mostly gradual.

The *course*. In cases in which hereditary taint does not exist, and when it arises acutely on the basis of exhaustion, the pathological symptoms may disappear in a few weeks. The course, as a rule, is chronic, with numerous remissions and exacerbations, seldom periodical.

The results are:—

1. Complete recovery, as remarked above, or recovery with tendency to relapses.

2. Continuation of the disease with remissions and exacerbations.

3. Transition into typical paranoia, very rare.

4. Death by suicide, which the patient commits from fear of insanity or because he cannot longer endure his anguish.

*Diagnosis.*—As a decisive symptom in the assumption of imperative concepts, *insight into the disease* present must be considered. He who is affected by these ideas must confess that they are of pathological nature. There are many transitions between the impulsive habits which occasionally appear with the healthy, and which have arisen frequently from faulty education or precept, and the imperative concepts of rudimentary paranoia. There are also rare cases in which a transition of the conceptions into delusions takes place.

The *primarily* appearing imperative concepts are to be distinguished:—

1. From the *secondary* ideas arising on the basis of a central neurosis or a psychosis of oppressive power, which are symptoms of the corresponding disease. An insistent idea of the unfaithfulness of one's companion in marriage may appear on the basis of *hysteria*: hysteric jealous insanity, which sometimes is distinguished with difficulty from excessive jealousy; sometimes ideas in regard to the pressure of the urine, flatulence, sexual images which continually oppress hystericals.

In *epileptics*, regularly returning, impellent ideas may form the aura of the epileptic seizure or the equivalent of the same, and sometimes, also, occupy the patient during the intervals.

In this connection they might be called *hysteric or epileptic imperative concepts*.

In the most diverse *psychoses*, especially among the melancholiacs and paranoiacs, insistent *delusions* may appear dominantly in the foreground.

These impulsive delusions are to be distinguished from imperative concepts by a comparison of the different geneses, one of which reveals by the anamnesia an individual psychically diseased, the other a person mentally sound; the clinical picture

with other symptoms of mental disease running a very diverse course, as a rule terminating in recovery; the other type running a chronic course, even though the intensity of the process may vary, without the individual being or becoming mentally diseased.

2. From the phobias which arise on the basis of hypochondria.

3. From the *residuary* oppressive ideas (like residuary hallucinations) which remain behind for a long time after the termination of a psychosis.

The *prognosis* for a *complete permanent recovery* in paranoia rudimentaria is not favorable in the great majority of cases.

The *treatment*, above all, consists in agreeable diversions, especially by physical labor, by engaging in sports, undertaking journeys in sympathetic company (only exceptionally sending to institutions, if every other avenue is closed or if it is impossible to keep the patient at home), hydrotherapy in the most various forms; finally, psychic influence, by which one should endeavor in all ways to assure the patient that he will not become insane, about which he is almost always in the greatest anxiety with a vivid consciousness of disease. For remedies arsenic may be used, and nitroglycerine (in drops or tablets at 0.0005 to 0.001, several times daily. The patient should be quieted, in the occasional exacerbations, by the employment of bromide preparations, phenacetin or pyramidon.

### (b) Typical Paranoia.

#### 1. Acute Simple Paranoia.

The disease begins with insomnia, anorexia, or depression. The patient believes he observes, at home and on the street, that special attention is being directed toward him and connects extraneous circumstances with this (delusion of observation, pathological self-interest, Neisser). He thinks that people wish something from him or wish to mock him, joke about him. The disease generally passes by in several months, with gradual tranquilization and without coming to further systematic development.

Magnan understands by *déire d'emblée* (fulminating delirium) where there is strong hereditary taint, persecution and grandiose ideas, which appear suddenly and reach their culminating point in a few hours, and which often pass over into recovery in a few weeks. With this a transitory state of confusion may appear. I have sometimes seen such short states of ideas of persecution, sometimes lasting only several days, especially in the climacteric and in connection with menstruation. Relapses sometimes occur.

## 2. *Chronic Simple Paranoia (Combined).*

The disease begins so gradually that generally the time of its beginning cannot be fixed.

1. *Initial stage.* The disease is so insidious that it is not unmistakably recognized by the friends and relatives of the patient, until a considerable time after the outbreak. The patient becomes a recluse and non-communicative. On the other hand, he is easily excited, disturbed, and even violent. Sometimes his bizarre movements, the peculiar intonation of single words attract attention. With this, his physical health appears essentially undisturbed; however, sleep is defective and the appetite is fickle. The patient, however, attends to his business.

2. *The paranoic stage.* The patient sometimes shows his delusion very suddenly, whether it be in connection with some peculiarly exciting occurrence or a slight fever: "I have long remarked that people have noticed me, that they are attentive to me, that they point to me everywhere. There must be a conspiracy against me, perhaps I have a double. I never feel safe on the street for a moment; allusions to me are made even in the newspapers." But he not only thinks that the present refers to him in all its occurrences (delusion of relation), but he thinks the same of the past: "People have persecuted me and still persecute; Social Democrats, Free Masons, the police watch me constantly." If asked what end the persecution serves, he answers: "I do not know what it signifies. Does any one wish to test me, does any one wish to get something from me? There must be some secret in it. At all events, I appear to be the object of special attention." In the further course, the secret is discovered by the patient: "People have found out my im-

portance, but wish to hinder me from taking the rank due me in science, in art; for this reason they wish to destroy me, body and soul." "They know that I am of royal lineage, that I am called to take the throne, to found a new religion, and they confine me in an institution to render me innocuous. Thus the ideas of persecution and of grandeur gradually become systematized in logical sequence. In a series of cases, instead of reaching the above-described megalomania, it only comes to slight over-appreciation of himself, which is first perceived on careful examination. But sometimes every hint of a grandiose idea is lacking; on the other hand, there is a feeling of a certain mental inferiority: "They wish to get rid of me, since I am too weak to struggle for existence." In other cases the ideas of persecution seem to be lacking, and only grandiose ideas seem to exist; yet an exact anamnesis will prove that the first have existed earlier.

Where the trend of the delusion has been in a single direction, some have spoken of a fixed idea and thought that the patient was mentally diseased only on that one point. The incorrectness of this assumption has already been shown.

Many of the insane "inventors," "reformers," and a considerable number of the so-called querulants are recruited from the paranoiacs.

3. *The stage of dementia.* With the diminution of the energy a state of mental weakness gradually enters, frequently only after decades. The prophets, emperors, and kings then lead a quiet existence in the institutions and may be suitably occupied there. In a series of cases the delusions systematized earlier in the course of the disease are repeated nonsensically in variegated confusion: "I am the daughter of the Empress Frederick, heathenish Jesuit, Katy of Heilbronn, influenced spiritistico-magnetically, persecuted by Free Masons."

### 3. *Acute Hallucinatory Paranoia.*

The clinical type and the course are essentially the same as those of acute simple paranoia, and distinguished from this only by the presence of hallucinations.

The disease is wont to last from a few weeks to several months, is distinguished from hallucinatory delirium essentially

by the circumspection existing in paranoia, the lack of confusion, and the systematization of the hallucinations and delusions. The disease sometimes appears in connection with dysmenorrhœic conditions, oftener in the climacteric. Where it appears on the basis of an intoxication, especially alcohol intoxication, it is to be assigned to the intoxication psychoses, and not to the functional psychoses.

#### 4. *Chronic Hallucinatory Paranoia.*

1. *Initial stage.* The disease regularly begins with sporadic, entirely abrupt hallucinations of audition, foreign to the entire content of the thought of the patient: "Rascal," "boor," "Old August," "you must marry." The patient is at first inclined to believe that he is being deceived, seeks after those who have called, and gradually, from the constant return of the hallucinations, becomes convinced, instead of doubting; he knows that he is the object of persecution.

2. *Paranoic stage.* In the same manner as in simple chronic paranoia, the delusions of persecution develop, and later those of grandeur. Meanwhile there are often states of excitement caused by the heightening of massive hallucinations; these states may show transitorily the type of hallucinatory delirium and even reach raving excitement.

3. *The stage of dementia* is accustomed in this type to appear earlier than in simple paranoia. But here quite often a decade passes before there is weakening of the intellect.

#### Varieties.

1. *Hypochondric paranoia.* There is a form of chronic paranoia in which the chief symptom consists of hallucinations of the coenesthetic sense, which is generally the forerunner of the disease. At its height the patient says that his body is annihilated, that they have destroyed all his organs singly, that he is a whole hospital, his persecutors have done this by magnetism, by injurious vapors, by poison in his food. Those persecutors are Free Masons, "Illuminati," the first dignitaries of the state, they intend to prevent him from attaining his purpose.

2. *Primitive paranoia* (Sander). The disease develops

even in childhood, with a degenerate family history as a foundation, with peculiarities, reservations, either in a quiet, diffident, dreamy, or malicious, irascible nature with hypochondric ideas, sometimes with nocturnal fears, convulsions, with considerable disturbance of the bodily development and excessive onanism. The patients perceive, even in school, persecutions in the conduct of their schoolfellows. With the entrance of the years of puberty there is the development of a complete psychosis, sometimes with katatonic stupor, with frequent change of the types, now maniacal exaltation, then melancholic or hypochondric depression. With these, delusions of persecutions exist, sometimes ideas of grandeur. Stories and romances often supply these delusions with their content.

Many of these patients are distinguished by their inclination to fabrication (*paranoia confabulans*). This is a form of paranoia which leads to *dementia præcox*.

3. *Paranoid melancholia*, a combination of melancholic with paranoic delusions: "People make hints, reproach me, tease me, turn away from me, threaten me with severe punishment." With this, they explain that the treatment which they receive, the threatened punishment, does not correspond with the slight fault which they may have committed, when they did not perform their duty satisfactorily, when they did not remain at home, when they went walking with a man, and the like.

4. *Paranoid dementia*. Kraepelin has comprehended under this name those cases in which the paranoic ideas are very absurd and fantastic from the beginning, and in which the patients, especially children, but also the aged, quickly reach a childish confusion.

5. Some of these cases of paranoia do not develop in the second stage in the manner described, but a transitory or permanent katatonic state appears, as has been already described (*katatonic paranoia*).

6. In rare cases the paranoia runs a periodical course (*periodical paranoia*).

### Special Symptomatology.

1. *Hallucinations*. While in simple paranoia illusions or hallucinations do not, or, sometimes, only transitorily, appear,

hallucinations appear and characterize the beginning and course of hallucinatory paranoia. Above all, they are hallucinations of the auditory sense which frequently appear first in single words or sentences. More often there is audibility of thought. The auditory hallucinations are rarely unilateral or doubled. Sometimes the voices are in the larynx, in the breast, in the abdomen. In sporadic cases the patient, on the basis of his hallucinations, reaches the conclusion that there is another beside the Ego (double personality). A triplication also appears: "Besides the Ego, God and the devil are in my head and combat each other." Hallucinations of smell and taste are frequently connected with ideas of poisoning; visual hallucinations are relatively rarer. The hallucinations of the *cœnesthetic* sense have already been mentioned under hypochondric paranoia. As a result, a state of stupor may arise, the patient feels that some one is holding his tongue, his hands, or other organs (stuporous paranoia, *Ziehen*).

2. *Thought*. Memory and intelligence may remain unimpaired in paranoia for many years, even for decades. A patient with hallucinatory paranoia, while in my hospital, wrote a work on modern Greek literature which received favorable criticism.

The delusions which appear in paranoia are, first, the delusion of persecution, which develops from the delusions of attention and of relation. But the patients do not think, as the persecuted melancholiac does, that the persecution has a cause founded in their life and actions, but they are convinced that the persecution is in the interest of others. In this delusion of persecution the patients sometimes consider themselves the center of all events which take place and which are always directed against them (*delirium convergens*). The persecutors are usually at first unknown ("They persecute me," "A man has ruined me by sharp glances," "I have been photographed while bathing, the photographs have been distributed among the people"); later, special persons are named, oftener groups of persons: "The lodge," "the brothers of the black hand," and like utterances. Connected with the ideas of persecution are metabolic or palingnostic delusions, in which the patient transforms his ideas of those around him to correspond to his delusion. The attendants are disguised detectives or officials who



serve him. The identifying form of the deception of the memory is also observed.

Where the delusions relate especially to erotic matters, the patient suffers from *erotic paranoia*, for which Don Quixote gives us the classical type. Such patients see in the ciphers in the journals allusions to themselves. In other cases the paranoia appears as the *delusion of jealousy*.

In *religious paranoia* the patient finds hints for his true avocation in the Bible or in sermons; persecuted paranoiacs assume that the devil has taken possession of them, that they are bewitched (*demonomania*).

In a number of cases the persecuted and injured paranoiacs become persecutors. To these belong, also, some of those who suffer from querulant paranoia;<sup>1</sup> while they believe that they have suffered in their rights, they attack, in complaints and writings, those who they think have caused this, injure their supposed interests as much as possible, and, since they pass all bounds with their complaints, are quite often subjected to new litigation for offending the judges, for accusing the witnesses of perjury, for lèse majesté. This form of paranoia first breaks out late—in the fourth to fifth decade of life. The accidental cause of the outbreak of the disease is generally unfortunate litigation. The intelligence, the pettifogging logic, and sometimes an excellent memory, which holds always at tongue's end the code of the civil and criminal procedures, often deceive the judge as to the morbidness of the condition and sometimes the physicians as well.

A state of mental weakness usually appears very late.

3. Sometimes the *speech* of paranoiacs shows nothing noteworthy; sometimes they utter in sentences peculiar nonsensical words, generally consonant with their hallucinations, in a discourse which is otherwise intelligible: "They accuse me of charlatanism at the drug store," "rabid speech." Sometimes paranoiacs do not speak at all, either from the influence of hallucinations, of stupor, or, *e.g.*, in order not to betray their presence by speech.

Sometimes cabalistic signs, underlining of single words which have a relation to delusions, are found in manuscript.

<sup>1</sup>Hitzig. Ueber den Quärlantenwahnsinn. Leipzig, 1895.

4. The *actions* of paranoiacs show, in a series of cases, nothing striking, so that they are able to carry on their business in a regular way and only betray their mental disease if one speaks of the dominant series of delusions which occupies them.

Sitophobia in paranoiacs often appears in consequence of ideas of poisoning, and is also observed in the stuporous state already mentioned. Suicide is rare in paranoiacs as compared with melancholiacs.

For the rest, paranoiacs belong to the most dangerous maniacs. They show considerable intelligence in their delusions, which aids them in the choice of means to take revenge on their persecutors, and they often accomplish their object. Paranoiacs play a considerable part in history, especially in murderous attempts upon persons high in position.

5. *Physical symptoms.* Paranoia offers no peculiarities except the common physical symptoms of mental disease. In hypochondric paranoia a specially accurate examination of the internal organs is necessary, since hypochondric delusions are not so very seldom connected with special physical changes.

*Etiology.*—Among the functional psychoses paranoia takes the third place after delirium hallucinatorium and melancholia in point of frequency. Chronic simple paranoia is the most common, acute simple paranoia is the most rare. For the rest, paranoia is not distinguished etiologically from the other mental diseases.

The *outbreak* of paranoia is usually gradual. The course may be (1) acute or subacute, (2) progressive, as it is described above, and (3) remittent, in that sometimes there is a fading out of the delusions and with it more or less tranquillity. The *duration* in the acute type is from a few weeks to some months; in the chronic type, a lifetime.

*Diagnosis.*—The diagnosis of paranoia is not made by the fact that paranoic delusions are present, but it must be shown that these delusions are the primary and essential ones of the disease. Paranoia may be confounded with

1. Melancholia, from the ideas of persecution present. We have discussed previously how the paranoiac and the melancholiac behave in the presence of persecutions.

2. Hypochondric melancholia, from the hypochondric

delusions. Even here, since the phenomena may have the same content as the hypochondric delusions, it is of importance in the differential diagnosis that the melancholiac regards the pathological change as a punishment for his sinful life, but the paranoiac as a consequence of the misdeeds of his persecutors.

3. The differential diagnosis with delirium hallucinatorium, which is of importance with special reference to acute hallucinatory paranoia and transitory states of confusion in chronic hallucinatory paranoia, has already been mentioned.

4. Paranoia is distinguished from the paranoic delusions in organic brain diseases by the absence of all symptoms of an organic lesion, from those which are called forth by intoxications, by the lack of symptoms denoting intoxication, and by the anamnesia.

5. Finally, especial regard to dissimulation should be observed in the diagnosis of paranoia. Sometimes great psychiatric experience and long observation of paranoiacs are necessary to be sure of the disease, especially if the patient thinks that he is under observation.

*Treatment.*—In the acute forms of paranoia commitment to an institution seems necessary for a speedy cure. As for the chronic forms, treatment in an institution is desirable on account of the homicidal tendencies of the patient in hallucinatory paranoia, so long as weakening of the intellect or of the energy has not appeared. The same is also true of chronic simple paranoia as soon as the behavior of the patient shows that, from being persecuted, he may become a persecutor or has already become one, or that his grandiose ideas may lead to dangerous actions. For the rest, the treatment of paranoic patients should be essentially symptomatic.

## 6. Acute Dementia.<sup>1</sup>

*Acute dementia is a functional psychosis, which is characterized by the primary appearance of a more or less complete paralysis of the mental functions.*

After a short preliminary stage the patient presents the

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<sup>1</sup> Binswanger. *Charité-Annalen*, vol. vi. Schüle. *Zeitschrift für Psychiatrie*, vol. xxxviii.

image of complete disorientation. He knows neither his age nor dwelling, scarcely his name. Sometimes he does not answer at all, and scarcely shows any mental activity. With this, his gaze is directed to a distance, his mouth is half opened, the saliva trickles therefrom, the lines of his countenance are lax and betray no expression (hypotonic stupor). In the further course of this state the patient must be fed, he passes urine and feces involuntarily. Sometimes a greater or less degree of restlessness is observed. The pulse is generally retarded, the temperature subnormal. The recovery from the disease, as a rule, is reached gradually; in time the patient gains his former mental power. His memory during the course of the disease, and sometimes also for some days before it, either fails completely or it is imperfect.

*Etiology.* This disease is the rarest of the functional psychoses. It attacks preferably young persons of from twenty to thirty years of age, more frequently males. The immediate cause of the *outbreak* is sometimes psychical traumata, anxiety, fright (railway brain). It is sometimes observed after immoderate physical or mental exertion, after unsuccessful attempts at suicide, seldom after acute affections. The *duration* of the disease extends from a few days to several months. The results are:—

1. Recovery in about 80 per cent. of the cases.
2. Transition into terminal dementia.
3. Death through intercurrent diseases.

Accordingly, the *prognosis* may be called favorable.

In the differential diagnosis one should consider:

1. Delirium hallucinatorium (which see).
2. Anxious stupor (delusional stupor, Newington). In this case the anamnesia decides; it allows the melancholia, which is present a long time before the stupor, to be recognized; further, the expression of the countenance, which is very melancholiox-anxious in anxious stupor, is blank and idiotic in acute dementia. The musculature of the body is rigid in the former, but lax in the latter. With the former there is sitophobia, which can be overcome only by force; in the latter, nourishment is taken with the help of others without resistance.

3. Anamnesia and course decide in the twilight conditions of the pre- and post-epileptic states.

4. In regard to the aphasic conditions, the expression of the face may come from a man who has become acutely idiotic and be connected with aphasia apraxia; thus the clinical type may be allied with that of idiocy. The apoplectic origin of the affection, the hemiplegia usually present on the right side, and the more exact confirmation of the aphasic condition will confirm the diagnosis.

*Treatment.* The therapy of acute dementia must be tonic, with abundant nitrogenous diet, beer and wine. The quinine preparations and iron are to be recommended.

Where the conditions of the home assure constant watching, the patient may be treated at home. An institution will be necessary for the majority of the poorer and middle classes. Rest in bed is beneficial in all cases.

#### **The Pathological Anatomy of the Functional Psychoses.**

A pathological anatomy of the functional psychoses does not at present exist. However little it may be doubted that there are anatomical changes in the brain, it has not been possible, so far, to discover characteristic alterations. The occasional findings are partly accidental, and their ultimate pathological nature has not been definitely proved. In the last respect we still especially lack a confirmation of those changes in the ganglion cells of the cortex which appear even in the domain of health. In reference to terminal dementia after functional psychoses, see "D. The Pathological Anatomy of Mental Diseases."

### **III. THE PSYCHOSES ARISING FROM CENTRAL NEUROSES.**

#### **1. The Epileptic Psychoses.<sup>1</sup>**

Mental disturbances may appear in epileptics:

(a) As a pre-epileptic psychosis (immediately before the seizure.)

(b) As a post-epileptic psychosis (immediately after the seizure).

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<sup>1</sup> Pick. *Zeitschrift für Heilkunde*, vol. x. Wildermuth. *Wuerttemberg. Correspondenzblatt*, 1890. Sommer. *Archiv für Psychiatrie*, vol. xi.

(c) As equivalent of the epileptic seizure, psychical epilepsy, epileptoid seizures, twilight conditions (*epilepsia larvata*).<sup>1</sup>

While the types mentioned run an acute or subacute course,

(d) A chronic mental disease may develop on the basis of the epilepsy.

#### **(a) Pre-epileptic Insanity.**

Preceding an epileptic seizure minutes, hours, or days, a twilight state may appear in which complicated actions may be completed with clouding of the consciousness and exclusion of the self-consciousness. These have an automatic character. If clouding of the consciousness is connected with hallucinations, the condition is referable to dream states (see twilight states).

Less often the pre-epileptic insanity appears as a state of depression with melancholic or hypochondric delusions. When massive hallucinations appear, these may rise to raving. The epileptic seizure usually ends the mental disturbance, yet sometimes it continues as a post-epileptic psychosis.

#### **(b) Post-epileptic Insanity,**

which is far more frequent than the pre-epileptic, may appear as a twilight or dream state. With this appear hallucinations of sight, often visions of red (*Siemerling*), also hallucinations of smell (odor of sulphur), less often hallucinations of hearing.

Less frequently post-epileptic insanity appears as maniacal exaltation, increasing to raving, or as melancholic depression; in the last case generally with religious ideas (delusion of transgression).

The paranoid symptom-complex, which post-epileptic insanity sometimes offers, expresses itself especially in ideas of persecution; it is, also, quite often connected with grandiose ideas. With these appear formidable hallucinations in the general and *cœnesthetic* senses; a stuporous condition, with *katatonic* rigidity of the muscles, may also develop. The post-epileptic psychosis seldom shows the symptoms of acute dementia.

The duration of the post-epileptic psychosis may be from a

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<sup>1</sup>These expressions are often used promiscuously. It is better to call those of short duration, running like a short epileptic seizure, epileptoid, and the protracted ones, twilight states.

few hours to several months. On its return there is generally a very striking resemblance to the preceding attack in regard to hallucinations and delusions.

During the period of the psychosis all recollection is often wanting; in other cases this is summarily present.

### (c) Epileptic Equivalents.

The epileptic equivalent may run from a state of unconsciousness, lasting a second to a minute, the appearance of a swiftly passing imperative concept, to the development of a psychosis lasting from weeks to months (epileptic equivalent, running acutely or subacutely). The clinical type may be entirely similar to the post-epileptic psychoses mentioned in the last cases. Sometimes, also, periodical attacks of profound sleep may appear as equivalents (epileptic narcolepsia).

*Special symptomatology* of the acute or subacute epileptic psychoses.

1. The hallucinations affect preferably the audition. In two-thirds of all the cases there are isolated auditory hallucinations; in about half, visual hallucinations; in about 40 per cent., hallucinations of both senses. Hallucinations of the *cœnesthetic* sense are frequent.

The hallucinations are mostly of a terrifying nature, partly of a horrible kind, yet they are often pleasing, phenomena of God, angels, and Heaven.

2. The delusions may have the most diverse contents; religious delusions are frequent, also such as have erotic or sexual content.

3. Self-consciousness is considerably disturbed in all epileptic psychoses, or transitorily suspended for a greater or less time.

4. The actions in epileptic psychoses have usually something sudden and violent, and the patients on this account become peculiarly dangerous.

5. Amnesia, which was formerly regarded as a characteristic symptom both for the epileptic seizure and the acute epileptic psychosis, is not complete in many cases; single circumstances may be produced, not others (*island-formed recollection, Moeli*).

6. With regard to the physical condition, the dilated pupils, which react slowly or not at all to light, are to be mentioned, also blunting of the sensibility and exaggeration of the tendon reflexes. The number of respirations is diminished, while the pulse is accelerated and the temperature is generally subnormal.

*Etiology.* Why epileptic psychoses frequently appear in many epileptics, never in others, is not known. The misuse of alcohol, psychic and somatic traumata may favor the appearance of psychoses; puberty may act in the same way. Pregnancy and parturition may often call forth epileptic psychoses in epileptic women. I have seen epileptic psychoses break out repeatedly after the epileptic seizure had been suppressed for a long time by large doses of bromide; in others, where the bromide, which had averted the seizure, was suddenly discontinued. A series of epileptic seizures, sometimes a status epilepticus, ends occasionally with a psychosis.

*Diagnosis.* The diagnosis of the epileptic psychosis is based on the anamnesia, the knowledge of epileptic seizures or past epileptoid conditions. Coincidentally, scars on the tongue, on the face, especially on the forehead and nose, are to be regarded as signs of preceding attacks. If there is no anamnesia to confirm the diagnosis, the epileptic nature of the disease is made very probable:

1. By the sudden and unexpected appearance of the mental disease.

2. By the obvious obscurity of the consciousness (cloudiness, Moeli).

3. By twitching in single extremities.

4. By a rapid transition with total or partial amnesia.

In the differential diagnosis are to be considered:

1. The acute alcoholic psychosis. There is often a combination of epilepsy and alcoholism. In regard to the alcoholism, the anamnesia and presence of the physical changes produced by alcohol are of importance.

2. Psychoses which have been called forth by organic brain disease (focal disease, paresis), and which generate epileptic seizures as a symptom. Here the examination of the peripheral nervous system gives the necessary evidence.

*Treatment.* Epileptic psychoses demand, as already stated,



most careful watching; and if they do not terminate in a few hours, as they often do, commitment to an institution is necessary. The treatment should be directed toward relieving the epilepsy, and large doses of bromide, digitalis, and atropin may be used. To obtain calm in the exalted states, chloral hydrate is recommended, best in clysters in doses of two to three grams.

#### **(d) Chronic Epileptic Psychoses.**

Where epileptic seizures return frequently, weekly or several times weekly, and even where they appear less frequently and continue for several years, a pathological mental condition generally develops whose essential characteristics are the following:

1. Retardation of the associations, with lack of judgment, want of endurance; with these, laziness at school, finding the tasks of life difficult; further, stunting of moral perceptions which previously existed (ethical defects).

2. Loss of memory, especially in regard to very early and recent events.

3. Exaggerated irritability, with diminished power of resistance, quick temper, violent actions. The restlessness and instability sometimes lead to a desire for wandering (poriomania, Schultze).

4. Facile and unmotivated change of the disposition.

5. Hypochondric moods, the patient's complete absorption in his own interests and a corresponding disdain for others. This egotism often makes the epileptic a "family panegyrist."

Only 25 per cent. of epileptics may be regarded as mentally normal.

The mental diseases which arise on the basis of epilepsy appear most frequently under the following types:

1. Mental weakness up to the highest grade of idiocy. Epileptic imbecility in many cases appears in connection with an inclination to commit immoral acts ("epileptic moral insanity," see (c) Pathological inversion of the feelings of judgment).

The highest grades of epileptic idiocy are very often accompanied with paralyses, contractures, deformities, sometimes with complete animalism. In the meantime various types of epileptic

psychoses, amounting sometimes to raving, may appear in this chronic condition in connection with epileptic seizures which accompany them, or as equivalents.

2. Paranoic states which show themselves in the further development of the above-mentioned ideas of detraction, quite often connected with grandiose ideas, and would offer the type of functional paranoia if epileptic seizures did not interrupt their course at intervals and mental weakness did not speedily appear.

3. Circular psychic symptoms which show alternately states of depression and exaltation, whose character, moreover, as in the above-mentioned paranoic conditions, is changed by the accompanying epileptic seizures and the mental weakness, and is distinguished by this from functional circular psychosis.

The course of the chronic epileptic psychosis is very tedious, often extending over a lifetime; the result is death, which occurs in about half the cases during the epileptic seizure.

The *pathological anatomy* of epileptic psychoses in long-continued cases shows the cranium thick and heavy; adhesions of the dura to the cranium in half the cases, the arachnoid thickened and milky; considerable increase of the neuroglia, which Bleuler considered as an increased growth of the glia fibers lying between the pia and the outermost tangential nerve fibers (diffuse subpial gliosis); atrophy of the frontal and parietal convolutions. Whether the changes at the cornu ammonis are somewhat characteristic of epilepsy (Meynert, Bratz), further researches must teach.

The treatment demands the treatment of the basic disease. Only the bromide preparations and atropin are remedies which should be considered. Of the first, one should administer once a day (best in the evening) from four to five to six grams in considerable liquid (one may connect it with small doses of digitalis, 0.01 gram; the last should be used subcutaneously in doses from 0.0003 to 0.0006, one to two times daily. In status epilepticus chloral clysters are of advantage, two to three grams.

A continuous watch is necessary symptomatically. The raving epileptics belong to the most dangerous insane patients, and, besides this, need constant watching on account of the wounds which they receive during the seizures.

## 2. The Hysterical Psychoses.<sup>1</sup>

*Hysteria shows two psychic peculiarities as essential symptoms: first, abnormal irritability; second, heightened suggestibility* (Jolly).

There may arise on the basis of hysteria:

(a) Acutely running psychoses as pre- or post-hysterical or as equivalents of the hysterical attack.

(b) Subacute and chronic mental diseases, hysterical psychoses. Finally,

(c) The symptoms of hysteria appear often coincidentally with another psychosis.

To (a). Sometimes twilight states of longer or shorter duration precede a hysterical attack—like those just before the epileptic seizure. A similar condition may show itself after the attack. But the following type is often observed here: After convulsions of laughter or weeping, marked motor unrest, where the patient turns around in a circle, turns somersaults, makes clownish motions, or assumes an opisthotonos; the symptoms of the agitated form of delirium hallucinatorium appear with raving excitement or a cataleptic or katatonic state where the body seems motionless, the patient like a statue with open mouth. Sometimes, also, especially in children, a childish joyful frame of mind develops with affected babblings, motor excitement, an inclination to injure or destroy things, as a supplement to an attack (Fürstner).

The equivalents of a hysterical attack appear either under the type of a delirium hallucinatorium with general restlessness, clownism, and the like, often also under the type of one of those states of clouded consciousness which have been described as twilight state, stupor, raving.

Visual hallucinations appear, with these mostly in the form of devils or animals seen in motion, which sometimes wander from the normal toward the anesthetic or hyperesthetic side. One may sometimes invert the direction by transfer (Charcot).

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<sup>1</sup> Moravsik. Das hysterische Irresein. Zeitschrift für Psychiatric, vol. 50. Fürstner. Archiv für Psychiatric, xxxi. Gasner. Archiv für Psychiatric, xxx.

States of ecstasy, also, are observed here. Sometimes such conditions are accompanied by attempts at suicide.

Further, there are peculiar twilight states in hystericals, with hallucinations of vision and audition and contemporaneous analgesia, in which the patient gives the most nonsensical answers to the simplest questions and behaves like a silly child. Accordingly the patient makes the impression of simulation (Ganser). Such an attack may last several months (Jolly). Further, narcoleptic states and somnambulism, in which a double personality may develop, may be mentioned as equivalents for the hysteric attack.

To (b). The subacute or chronic hysteric psychosis may appear:

1. As an inclination to immoral actions (hysteric moral insanity), where, generally, the intelligence is not essentially disturbed and the memory remains good. Besides the somatic hysteric symptoms, there is a constant impulse to make trouble at home, to insult women, to injure the housemaids physically, to lose the feelings of decency, to make false accusations, to steal, to set incendiary fires, and an impulse to lying which dominates the whole type.

2. With the symptoms of delirium hallucinatorium, which generally appear in the agitated form and in the condition described above.

3. As a maniacal state, increasing to raving, with erotic, sometimes religious delusions. The accompanying hysteric phenomena, especially the sensibility to external impressions, will easily distinguish it from typical mania.

4. As melancholic depression, which develops quite often in hystericals. It is distinguished from typical melancholia by being easily influenced, the sorrow is not so deep; sometimes it makes the impression of being artificial, as if the patient did not take it so seriously as he states.

5. As a paranoic symptom-complex. In hystericals the delusions develop especially as religious or erotic. In regard to the first, religious upheavals with alleged miracles and awakening of the dead, revivals, epidemic pilgrimages should be mentioned. The delusion of jealousy plays a considerable part in the ideas of an erotic nature.

To (c). Hysterical symptoms sometimes appear in imbeciles, in acute psychoses (mania, melancholia, circular psychoses, also in paranoia), especially if they come on at the time of puberty or in the climacteric. They also accompany certain intoxication psychoses (morphinism, alcoholism), especially when these have arisen on the basis of hysteria.

In some of the so-called hysterio-epileptic psychoses the fundamental disease is epilepsy; to this are added hysterical phenomena. In other cases there is only hysteria, and the severe attacks in which a loss of consciousness appears, and which give the impression of epilepsy, are only hysterical.

### Special Symptomatology.

*Hallucinations.* Hallucinations of vision are frequent in hysterical psychoses, those of audition not so common. Hallucinations of taste and smell are sometimes observed as agreeable, not repulsive, deceptions of the senses. The special direction of the delusions has been already mentioned above, but there are no characteristic delusions for the hysterical psychosis. The memory of these patients is apt to be good, yet it is more or less troubled by many disturbances, especially by twilight states, states of delirium hallucinatorium. Sometimes the memory is weakened in the other forms, and the recollection is often affected by phantastic ornaments.

The *sexual feelings*, whose pathological heightening is often regarded as a sign of hysteria, are not changed in many cases qualitatively nor quantitatively; quite often the sexual excitability is depressed (Fürstner). The relations of love which are connected with them arise generally, not from sexual excitement, but from the morbid desire to injure their consorts, their parents, and others.

The *sensorial nerves*. While a pathological hypesthesia, and even anesthesia, of the sense impressions is quite common during hysteria in single sensory nerves (hysterical amaurosis, hysterical deafness, ageusia, anosmia), a hyperesthesia of the affected nerves exists in the majority of hystericals. This hyperesthesia, which may extend to the entire sensory nerve system, becomes then the cause of hypochondric complaints.

With the disturbances of the sensibility are connected spasms and paralyses of the most diverse forms, as they are described more fully in the study of hysteria. Among the spasms are especially frequent the rhythmic spasms of the respiratory muscles in hysteric psychoses. As taught in neuropathology, the sufferings of hystericals are distinguished by susceptibility to the influence of other persons and by change of environment (suggestibility). This is true of all pathological psychic phenomena in hystericals and quite often furnishes a valuable symptom for diagnosis.

From this suggestibility results the ever-changing disposition of hystericals.

*Etiology.* While hysteria in men is not uncommon, hysteric psychoses appear in them only exceptionally. On the other hand, the type of the hysteric psychosis is often seen in boys, especially at the time of puberty. The hysteric psychoses are most frequently observed in females; here they appear at every age, but especially at puberty and in the climacteric. The immediate cause for an outbreak of the psychosis in hysteric patients is formed in many cases by a psychic trauma: chagrin, sorrow, care, injured love, terror, railroad accidents, and other insults.

*Duration.* Hysteric psychoses generally run a subacute course, if we do not regard the pre- and post-hysteric attacks and the equivalents. The result in most cases is recovery.

The *diagnosis* of a hysteric psychosis is assured:

1. By the anamnesia. Development of the psychosis from a hysteric attack or a previous clearly defined hysteria.

2. By the psychic image which, as in hysteria itself, shows lively changes of symptoms, and above all a considerable susceptibility. With this appear "the extraordinary ease and rapidity with which psychic states are active in many physical disturbances, whether it be anesthesia or paresthesia, movements of expression, spasms, or anomalies of secretion" (Kraepelin).

3. By the accompanying somatic phenomena, as they have just been described, clownism, opisthotonos. The reflex pupill rigidity, whose presence was formerly regarded as a proof against the hysteric nature of a condition, may also appear in hysteric attacks (Westphal, Karplus). Finally it should be observed

that hysterical psychoses show in a remarkable manner an inverse type of the body temperature, generally very low: Axillary temperature in the morning 98.5° F., in the evening 97° F.

4. Sometimes a hysterical attack may be checked in hysterical psychoses by pressing upon a certain point (at the left near the superior cervical vertebrae or over the ovarian region).

One should consider in the differential diagnosis:

1. Epilepsy with the mental disturbances developing from it. Here the anamnesis decides the observation of the hysterical attack with its peculiar symptoms as opposed to the epileptic, and, finally, the suggestibility which is absent in the epileptic.

2. The organic psychoses are distinguished from the hysterical by the characteristic symptoms of the organically conditioned paralyses, anesthetics, contractures, as opposed to the hysterical which may be present.

Finally, in regard to the diagnosis, as already mentioned, one should observe that the hysterical symptoms are sometimes associated with other psychoses.

The *prognosis* of the hysterical psychoses, on the whole, is favorable; relapses are, however, frequent. Many cases pass over into terminal dementia.

The *treatment* aims at curing the hysteria as the basis of the psychosis. Isolation is the first requisite in all hysterical psychoses (hence admission to an institution is advisable, and absolute rest in bed is recommended). Even in the institution it is best to isolate the patients. For the many cases where the nutrition is impaired, a tonic treatment is recommended. Finally, the mental disturbances should be treated symptomatically.

The oft-recommended operations on the female genital organs should be rejected and are only indicated where disease of those organs is present, which would demand an operation without reference to the psychosis. But even in such cases it is better to postpone the operation till after the cure of the psychosis, unless there is a pressing vital indication.

### 3. The Choreic Psychoses.<sup>1</sup>

#### (a) The Chorea of Sydenham.

Easy irritability, changes of the disposition, deterioration of the memory, inclination to waywardness, sluggishness are the pathological psychic phenomena which regularly accompany chorea.

In a proportionally small percentage of the cases of chorea a mental disease develops which runs in a majority of the cases under the type of a delirium hallucinatorium, with marked motor unrest and violent choreic movements. It seldom reaches maniacal excitement (Jolly), developing directly from the choreic motor unrest.

Chorea minor is to be distinguished from chorea major, in which there is severe hysteria with hysteric attacks.

The choreic psychosis, as a rule, terminates in recovery. Only exceptionally does it lead to death, especially in the chorea of pregnancy, from exhaustion and complications, *e.g.*, in premature birth.

The *treatment* calls for rest in bed, abundant nutrition; in very great motor unrest, antipyrin, three times daily, 0.5 to 1 gram is recommended, in very severe cases chloral hydrate per klysma.

#### (b) Chronic Progressive Chorea.<sup>2</sup>

Chronic progressive chorea leads, in the majority of cases, to an irritability of the patient which is connected with a gradual weakening of the mental power; sometimes, intercurrent paranoic states appear also, with or without hallucinations.

Exceptionally a paresis (Mendel, Wollenberg) develops from chronic progressive chorea.

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<sup>1</sup>Möbius. Seelenstörungen bei Chorea. Neurologische Beiträge II. Zinn. Archiv für Psychologie, vol. 27.

<sup>2</sup>Ladame. Des troubles psychiques dans la chorée dégénérative. Archives de Neurologie, 1900, février.



#### IV. THE PSYCHOSES OF INTOXICATION.

We distinguish:

1. Psychoses which arise from a toxin generated within the body itself: *endogenous psychoses, autointoxication psychoses.*

2. Such as are developed from a toxin introduced into the body from *without, exogenous psychoses*, and among these last are such as arise from infection; *infection psychoses*, such as are called forth by organic poisons; and

3. Such as are called forth by *inorganic* poisons.

##### 1. Autointoxication Psychoses. Endogenous Psychoses.

###### (A) Psychoses Brought Forth by a Disturbance or Suppression of the Function of the Thyroid Glands.

Experiments on animals and men whose thyroid glands have been removed (operative myxedema, Reverdin, Kocher) have shown that the function of the thyroid gland is of the greatest importance to the economy of the entire body. Yet it is questionable at present whether the pathological phenomena, appearing after the cessation or pathological change of the function of the thyroid gland, are produced because a toxin arising from metabolism is not neutralized, or because the fluid produced in the thyroid gland is absent in the metabolism, or, finally, if both factors work together.

###### (a) Infantile Myxedema.<sup>1</sup> (Idiotia Myxedematosa, Sporadic Cretinism.)

The injuries to the thyroid gland which call forth myxedema may affect the child before birth or in the first years of life. The symptoms of myxedema consist essentially in retardation of the somatic and mental development. The growth is that of a dwarf. The patient remains very small. The height of the Pâscha of the Bicêtre was 90 centimeters at 19 years. A child of 7½ years whom I myself observed was 49 centimeters in height. The bone formation is defective. Examination

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<sup>1</sup>Buschan. Ueber Myxödem und verwandte Zustände. 1896.

with the Röntgen rays shows defect of the ossification points of the epiphyses. In opposition to this, hyperplastic chondrodystrophia is found in rhachitis. The cutis is thickened, dry, of a yellowish color, the eyelids are slit-shaped, the lips puffed and everted, the nose is thick, depressed, the cheeks are like wax, pale with red flecks. On the chin and neck there are myxedematous tumors, also above the clavicle and especially on the volar side of the first phalanges of the fingers. The hair is scant or entirely wanting; in many cases even the down has disappeared. The teeth are carious, the neck is short and thick, the clitoris is generally enlarged, the thyroid gland cannot be palpated, the pulse is slow, the temperature habitually subnormal. The movements of the patient are generally clumsy, the gait often waddling.

The mental capabilities develop very slowly. Children of twelve to fourteen years are equal in intelligence to those of one to two years. Yet there are exceptions in which the intellect suffers but little. Speech develops only very defectively, has often a squeaking and whimpering character. The nature of these children is generally friendly and trustful. Sometimes epileptic or epileptiform seizures are observed in the first years.

Brissaud has described this condition under the name of *myxedematous infantilism*, in which the somatic and mental peculiarities of childhood remain till advanced age. The pathological type is composed of the large head, elongated body, prominent abdomen, rudimentary sexual organs sparsely covered with hair, mammary glands slightly developed, defective intelligence, rapid and abnormal entrance as well as traceless vanishing of strong emotions. Alcoholism of parents, hereditary syphilis, tuberculosis, and bad nutrition should be regarded as etiological factors. Between this infantilism and myxedematous idiocy there are gradual transitions.

*Diagnosis.*—Myxedematous idiocy is distinguished from idiocy by the absence of the somatic symptoms, and from fetal rhachitis both by the lack of disturbances of the intelligence, and by the peculiar qualities of the bones which have been mentioned above.

The *treatment* of myxedematous idiocy consists in administering thyroid tablets of 0.3 grams (preparation of Borroughs,

Welcome & Co.). One to three such tablets daily for a month; they are then suspended or given in smaller doses, and then begun again. Care should be taken that the body weight does not decrease too rapidly, that there is no abnormal acceleration of the pulse or rise of temperature, that no collapse-like or stenocardiac states appear, in which cases the tablets should be discontinued or the dose diminished.

**(b) The Myxedema of Adults (Pachydermic Cachexia) <sup>1</sup>**

arises from a disease of the thyroid gland, *e.g.*, by excessive employment of iodine or from the surgical removal of the thyroid gland (myxedema operativum).

The somatic phenomena are the same as those which have just been described in infantile myxedema, so far as the condition of the cutis, its adnexa, the pulse, and the temperature are concerned. In regard to the mental condition, the difficulty of thought and action, the marked depression of the memory are to be specially noted. An apathy of high degree appears, so that the patient has no longer interest in anything and does not care for his business nor his family. In the further development, the patients show the condition of apathetic idiocy. Sometimes the disease has a fatal result with the appearance of spasms and coma.

Sometimes further pathological psychic symptoms develop on the basis of the retardation of the psychic functions, especially of a melancholic nature with states of anxiety, also with hallucinations of the various senses.

The myxedema of adults affects especially women (the relation to men is about four to one) of the age of thirty to fifty years.

The *treatment* is the same as in the myxedema of children. It causes both the somatic symptoms and psychic abnormalities to disappear. One should administer three to five tablets daily.

**(c) Cretinism.<sup>2</sup>**

Cretinism is an endemic idiotism with definite somatic changes. These consist essentially in the backwardness of the

<sup>1</sup> Pilez. *Jahrbuch für Psychiatrie*, 1901, 77.

<sup>2</sup> Allara. *Der Cretinismus*. Leipzig, 1894.

osseous development, hypertrophy of the soft parts, and disease of the thyroid gland.

Cretins are divided according to degree:

1. Into typical cretins, who possess neither intellectual capabilities, articulate speech, nor power of propagation.

2. Into atypical cretins, who possess limited individual capabilities which concern essentially the satisfaction of bodily wants.

3. Into the cretinous, who may be encouraged to do manual labor, may learn easy handicrafts, but, with this, are mentally weak and often show a tendency to immoral actions.

The intelligence of the cretin shows all degrees, from a slight grade of weakmindedness to the highest development of idiocy. The higher grades belong as a rule to the apathetic form of idiocy.

Epilepsy and spasms are seldom observed in cretins. Often, however, there is a periodic suspension of all mental activity for several hours.

The speech of the cretin is but little, if at all, developed.

The cranium shows a great breadth at the root of the nose, strikingly small development of the base of the skull, and great arching of the occiput. The cause of this formation of the cranium is that the phenobasilar synchondrosis, which under normal conditions remains till the fifteenth year, becomes ossified prematurely (Virchow).

The hypertrophy and growth of the soft parts are shown in the face, trunk, and extremities, and resemble in many ways the myxedematous tumors.

The thyroid gland in most cases is enlarged, most frequently in the middle lobe.

Development of the genital organs of the cretin usually stops at the stage of childhood. The menses are absent or are irregular.

*Etiology.* In Germany we still find cretinism in the Jura Mountains and the Vosges. It is, however, becoming rarer, thanks to modern methods of sanitation. In Austria it is found around Salzburg, in Steiermark, Tyrol; in Switzerland, in the Cantons Wallis, Uri, Waadt; in Italy, in Piedmont, Lombardy, Venetia; in France, in Savoy and the Pyrenees. (In Austria,

17,293 cretins were reported altogether, in 1893, that is, 74 to 100,000 inhabitants).

Cretinism is found more frequently in males than in females.

The cause of cretinism is to be found in faulty drinking water. The specific injurious quality is unknown. It is to be assumed that this drinking water disturbs the functions of the thyroid gland, and that this disturbance is the cause of cretinism. The *course* of cretinism is chronic; generally, cretins do not reach an advanced age. The *prognosis* is unfavorable.

The *treatment* is prophylactic, looking to the betterment of the general sanitary conditions of the region affected. Aside from this, the thyroid treatment should be tried, although any particularly gratifying results from its use have hitherto been lacking.

Where helpless cretins cannot be cared for at home, or where they are inclined to violent actions, it is better to treat them in institutions.

#### **(d) Psychoses with Basedow's Disease.<sup>1</sup>**

The disease of Basedow is classed here, although it must still be regarded as doubtful whether the symptom-complex of this disease rests on an autointoxication, whose cause is the absence or disturbed function of the thyroid gland, or a central disease of the nervous system, and whether the disease of the thyroid glands forms only a partial symptom of the real disease.

The majority of individuals suffering from Basedow's disease are irritable, emotional; many are constantly depressed, others are unusually serene, and the psychoses which develop on the basis of Basedow's disease show in part the characteristics of the hysteric psychoses, others run in the type of delirium hallucinatorium; finally, there are melancholic conditions and, more seldom, paranoic states which develop in Basedow's disease. The *treatment* should be directed first to alleviate the disease, then to meet symptomatically the indications arising from the special psychic disease.

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<sup>1</sup> Mannheim. Der Morbus Gravesii. Berlin, 1897.

### B. Psychoses Which Come from the Intestine or Other Organs by Autointoxication.

It is assumed that toxins have been formed in these cases which produce a poisoning of the brain, and consequently, a psychosis. The point of departure of this autointoxication may be the intestine, and in this case the psychosis appears with acetoneuria and an increased secretion of indican.

These psychoses usually run a favorable course, though there are also cases which rapidly lead to death under the type of acute delirium.<sup>1</sup>

Further, toxins with their injurious influence upon the brain may arise in liver diseases, pulmonary tuberculosis (here especially hypochondric depressive states), in Bright's disease (as a mild form of uremia, generally with disturbances of the consciousness and spasmodic attacks), in gout, tetanus,<sup>2</sup> diabetes. Diabetic psychoses<sup>3</sup> sometimes appear under the type of hallucinatory paranoia with ideas of persecution, sometimes they are apparently typical melancholias, sometimes they show a state of mental weakness with paralytic conditions, so that suspicion may rest upon a developing paresis.

Sometimes psychoses are observed with carcinoma of the various organs.<sup>4</sup>

Many of the psychoses which belong under this head run acutely under the type of delirium hallucinatorium, yet frequently states of depression with a hypochondric character also appear; in this manner, also, states of mental weakness are observed.

The *treatment* must above all fulfill the causal indications; in regard to psychoses arising from the intestine we recommend calomel (0.3 to 0.5 gram calomel, divided in ten pills, which should be taken during the day), or iodoform in doses of 1 gram, also divided into ten pills (v. Wagner).

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<sup>1</sup> v. Sölder. Jahrbuch für Psychiatrie, 1898.

<sup>2</sup> Luther. Zeitschrift für Psychiatrie, 1901, lviii.

<sup>3</sup> Laudenheimer. Berliner klinische Wochenschrift, 1898.

<sup>4</sup> Elzholz. Jahrbuch für Psychiatrie, 1898.

## 2. Psychoses Which Are Called Forth by Poison Introduced Into the Body from Without (Exogenous Psychoses).

### (a) Psychoses Brought on by Infectious Diseases. Infection Psychoses.<sup>1</sup>

It is doubtful whether the infectious disease calls forth the psychosis *per se*. What is more probable is that in the course of the infectious disease, toxic substances are generated in the body, which condition the psychosis after the termination of the physical disease. The initial deliria in the infectious diseases speak for the origin of pathological psychic phenomena by primary intoxication.

They begin usually with profound disturbance of the consciousness and numerous sense deceptions. Their content often heightens the state of anxiety to raving excitement.

The same is essentially true of the deliria, which sometimes are so heightened at the *climax of the fever* that the patient gives the impression of being insane.

Such cases of initial and fever deliria come to the notice of the psychiatrist only when the diagnosis is erroneous (the mental disturbance masks the general disease) or in epidemics occurring in institutions.

In typhoid the initial deliria sometimes precede the well-defined somatic symptoms, and disappear with the increasing fever.

The deliria present at the height of the fever generally disappear with its decadence. In many cases there is a collapse delirium, with great confusion and massive hallucinations (delirium hallucinatorium).

The greatest number of infection psychoses<sup>2</sup> develop after the termination of the fever and at a time when one expects convalescence. Sometimes the hallucinations are transferred from the febrile to the stage of convalescence and to the psychosis. Sometimes they form the nucleus around which the future insanity crystallizes.

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<sup>1</sup> Kraepelin. Archiv für Psychiatrie, xi, page 161.

<sup>2</sup> Adler. Zeitschrift für Psychiatrie, vol. liii.

The diseases which are specially concerned here are influenza,<sup>1</sup> typhoid fever, dysentery, articular rheumatism, pneumonia, cholera, diphtheria, leprosy,<sup>2</sup> erysipelas, variola, whooping-cough.<sup>3</sup>

The psychoses following typhoid fever are distinguished by great prostration. They appear in many forms, as do the influenza psychoses. The psychoses under the type of delirium hallucinatorium are especially frequent. In the second place are the depressive forms, especially melancholic mental disturbances, rarely the maniacal forms, still more rarely acute dementia. An acoholic delirium or hysteric psychoses often develop after infectious diseases. The outcome of the infection psychoses is generally favorable; there is also a transition into chronic paranoia and terminal dementia.

Hitherto there has been no pathological anatomy of these psychoses.

Under the name of *Korsakoff's* psychosis (Jolly), a peculiar form of infection psychosis, first described by Korsakoff, is designated, which is associated in the majority of cases with a multiple neuritis (the psychic symptom-complex is also observed without neuritis), especially in alcoholists, but is also observed without alcoholism in various infectious diseases like typhoid fever, syphilis; sometimes, also, it arises through traumata of the cranium.

The first stage of the disease is generally formed by the syndrome of multiple neuritis with dullness and paresthesia in the hands and feet, with pareses especially in the legs, atrophy of the muscles, and change of the electrical reaction; in severe cases degenerative reaction, pain in the peripheral nerve trunks on pressure, weakening or even disappearance of the tendon reflexes, with grave gastric disturbances and acceleration of the pulse with undisturbed visceral reflexes are noted. In other cases the symptoms and discomforts of polyneuritis are so slight that the disease seems to commence with a delirious condition of

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<sup>1</sup> Friedländer. Ueber den Einfluss des Typhus abdominalis auf das Nervensystem. Berlin, 1901.

<sup>2</sup> Max Laehr. Die nervösen Krankheitserscheinungen der Lepra. Berlin, 1899.

<sup>3</sup> May. Archiv für Kinderheilkunde, 1901, neuritis multiplex.



the patient, giving the impression of an alcoholic delirium, but in which the neuritic phenomena are manifest on examination. Sometimes a stuporous state supervenes instead of this delirium.

The psychic disturbances which characterize the following stage of the disease show much disorientation as to time and place, with very striking disturbances of the memory, which are partly amnesic (also with retroactive amnesia), partly paramnesic. The patient is considerably disturbed in his attention, forgets immediately or after a few moments what was just said or has just taken place, and he replaces events of his former life, where his recollection fails, by images which he has obtained, partly by dreams, partly by hallucinations, partly by the fantastic transformation of momentary perceptions. From this comes much confabulation, incoherent narratives, histories of robbers.

The *course* of this disease is habitually protracted. Hallucinations and loss of memory gradually decrease. Sometimes paralyzes of the nerves (abducens) and muscles of the eye, nystagmus, paresis of the velum palati appear. The *result* is generally a recovery, often after a year and longer; in many cases a state of mental weakness develops, in others a paranoic symptom-complex; finally, death may follow.

In regard to the *diagnosis*, paresis should be considered before everything else. Here the development of the disease, which is much slower in paresis than in Korsakoff's psychosis, but above all, the evidence of the multiple neuritis, which does not belong to the clinical type of paresis, is decisive.

*Treatment.* If the disease has arisen on the basis of alcoholism, treatment should be directed accordingly; otherwise, it is symptomatic.

For the psychoses which arise from syphilis, see under "2. Somatic Causes."

### (b) Ergotism.<sup>1</sup>

The use of ergot may call forth psychic diseases, which arise, with few exceptions, months after the acute intoxication. They begin with cachexia, generally with epileptic seizures, show ataxia and disturbances of the sensibility among the somatic

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<sup>1</sup>Tucek. Archiv für Psychiatrie, vol. 13.

symptoms, and regularly enter with melancholic depression, much numbness and inactivity of the mental functions. After the disappearance of the pathological psychic symptoms, epileptic seizures often remain for a long time; the patellar reflex may also be long absent. The treatment should regard the prophylaxis chiefly, improvement of nutrition and the general somatic condition.

### **(c) Pellagra<sup>1</sup> (Maidism, Psychoneurosis Maidica).**

This disease is caused by spoiled maize, which shows in the prodromal stage general distress, fatigue easily brought on, disturbances of digestion, usually with areas of redness of the skin, which is chapped, cracked, and deprived of epithelium. The second stage is dominated by the pathological phenomena of the intestinal tract, and the third stage shows, besides disturbances of the nervous system (weakness and pareses, paresthesias and anesthetics, weakening of the cutaneous reflexes and exaggeration of the tendon reflexes), a melancholic depression which often passes to the stuporous form.

Here, as in ergotism, the treatment should be essentially prophylactic.

## **3. Psychoses Which Are Evoked by Organic Poisons.**

### **(a) Alcoholic Psychoses.<sup>2</sup>**

Alcohol takes a very prominent place in the etiology of mental diseases. At least 15 per cent. of all cases of insanity are directly caused by alcohol, or it is one of the chief causes. [From careful study of the reports of the New York State Lunacy Commission, 1888-1902, Krauss found the proportion of insanity cases reported as due to alcohol in all the New York State hospitals a trifle less than 9 per cent.]. We distinguish 1, acute; 2, subacute; and 3, chronic alcoholic psychoses.

<sup>1</sup> Jahrmärker. *Archiv für Psychiatrie*, 1901, xxxv.

<sup>2</sup> Magnan. *De l'alcoolisme*. 1893. Siemerling. *Charité-Annalen*, 1891. Moeli. *Statistisches und Klinisches über Alcoholismus*. *Charité-Annalen*, 1884. Liepmann. *Archiv für Psychiatrie*, vol. 27. Baer. *Alcoholismus*, 1878.

### 1. *The Acute Alcoholic Psychosis (Pathological Drunkenness).*<sup>1</sup>

Acute alcoholic intoxication interests us here only so far as the state denominated drunkenness runs an *abnormal* course. These abnormal states of drunkenness arise in the great majority of cases on the basis of chronic alcoholism, yet, without this, acute alcoholic psychoses also appear after very debilitating somatic diseases on the basis of considerable hereditary taint, in epileptics, after injuries to the cranium. Very often it is not the quantity of the alcohol taken which determines the appearance of these abnormal conditions, but rather the individual susceptibility and the environment under which the poison is taken. It may show itself:

(a) Under the type of apoplectic drunkenness. Death follows the state of unconsciousness under the appearance of a general paralysis.

(b) As a convulsive form of drunkenness which generates an epileptic seizure and maniacal states following it, which may increase to raving (*mania acutissima ebriorum*). This condition is accompanied by manifold, frightful hallucinations, and often leads to the violent destruction of whatever is near the maniac.

(c) Twilight states (alcoholic trance), see 1. Twilight states.

The drunken one appears externally calm, answers ordinary questions without delay and according to their meaning, hardly attracts attention to his common corporeal functions—in short, he gives many of those around him the impression that he is normal, if they do not observe him closely.

But then very peculiar actions arise, whether it is in overstepping the ordinary rules of decency (indecent expressions, urinating before persons of the opposite sex), or in committing criminal actions (*lèse majesté*, exhibitionism, crimes against decency, arson, violent actions towards others, sometimes, also, attempts at suicide).

These states often run their course with a certain anxiety,

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<sup>1</sup>Bonhöffer. *Die acuten Geisteskrankheiten der Gewohnheitstrinker*. Jena, 1901.

with delusions of persecution, and frightful hallucinations which call forth weeping and shrieking.

In the majority of cases during this condition there is the possibility of mental digression for a short time and, with this, also, the possibility of the interruption of an action, either in contemplation or in course of execution.

This is quite often linked with recollections of the patient's activities and predilections of the time anterior to the darkening of his consciousness.

Rarely, in the place of the twilight state, there is a state of stupor, but sometimes raving and without the medium of an epileptic seizure, as mentioned above.

The duration of a pathological drunkenness may be a few minutes, hours, or, exceptionally, a day; it generally passes away in a deep sleep.

## 2. *The Subacute Alcoholic Psychoses.*

*Delirium tremens*, the insanity of the *drunkard*.<sup>1</sup> We distinguish four stages in the course of *delirium tremens*:

1. The *first stage* shows, besides gastric disturbances, certain symptoms of anxiety and sporadic hallucinations. The patient, however, is able to control himself externally and carries on his affairs.

2. The *second stage* is distinguished by a triad of symptoms: 1, trembling; 2, insomnia; 3, delusions with sense deceptions. The patient may recover from this stage in a few days or weeks.

The *third stage* develops with great agitation, violent actions with increase of the hallucinations. The patient shrieks, quarrels, strikes; the excitement may rise to the highest degree of frenzy.

The *fourth stage* consists of epileptic spasms, which generally lead to death, or musing deliria develop, the pulse becomes small, frequent, the temperature rises to 102°, 103° F., death comes from exhaustion. Sometimes it results suddenly with symptoms of collapse.

Deviations from this course are shown by:

(a) The abortive form of *delirium tremens* (Näcke) with

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<sup>1</sup>The name comes from Thomas Sutton, 1813.

slight, mostly hypnagogic hallucinations, in which the patient seems very intelligent and performs his accustomed labor, even though it may be interrupted.

(b) Chronic delirium tremens (Näcke). The delirium drags along for weeks, because there are always new relapses when one attack seems to have run its course.

(c) Febrile delirium tremens (Delasiauve). The above-described fourth stage appears after a short prodromal stadium, the second and third stages are omitted.

(d) Polyneuritic delirium tremens, Korsakoff's disease (which see). (a) Psychoses brought forth by infectious diseases. Infection psychoses.

### **Special Symptomatology.**

Illusions and hallucinations of vision appear, as a rule. The patient sees small animals, bugs, frogs, fleas in the folds of the bed clothes. But he sees large animals, elephants, rhinoceroses, coming in through the door. Liepmann observed such animal hallucinations in 70 per cent. of all cases. The form of these hallucinations is often connected with disturbances of the association of the eye muscles, also with tremor of the muscle of Brücke, and is often accompanied by loss of the color sense. Illusions and hallucinations of audition are generally of a terrifying nature; the patients hear themselves abused, insulted with the commonest epithets, sometimes the patient hears his own thoughts spoken. Hallucinations of taste and smell are rarer; kinesthetic hallucinations, on the other hand, are frequent. The hallucinations which have a more stable character at the beginning of the disease, appear later with lively changes and are then in constant agitation; while they recede during the day, they are especially vivid at night. Such deliriantes offer a peculiar type; they seem to be fully oriented during the day, but tell the most horrible stories of robbers whom they have seen at night, of whose objective reality they are most thoroughly convinced. One may often call forth the visual hallucinations by pressure on the eyeball of the deliriant. The pressure image of Purkinje appears normally as the sun, moon, stars without connection, but not terrifying or causing anxiety (Liepmann). One often observes the patient standing, as if really observing

the hallucinations; he declares that everything suggested is real. The capacity of these deliriantes to have hallucinations, especially visual ones, by suggestion, is peculiar to them. "There is a spider." The patient sees it at once.

Bonhöffer designates as "*puzzle hallucinations*" those in which the hallucinated object, which the deliriant attempts to seize, vanishes at the same moment.

The delusions are closely connected with the hallucinations, and, like them, are almost always of a terrifying, persecuting nature. The delusions are seldom merged, so that the patient believes that he has become another person. However crazy may be what he experiences and what he tells, he is able to give objective information about his person and his condition, and by this is easily brought away transitorily from his hallucinations and delusions, so that for a short time his attention may equal the keenness of the normal (Bonhöffer). One frequently sees him in his delirium occupied with his ordinary labor and in the position generally taken by him (*delirium of occupation*).

The frame of mind is, corresponding with the hallucinations and delusions, anxious, fearful, distrustful. Many deliriantes, however, appear calm, a serenity which Kraepelin, playing on the name, has called gallows humor.

The actions result from the sense deceptions and delusions. They often become violent as a defense against enemies, and quite often lead to self-injury in consequence of the hallucinations. The patient walks out of the window, which he thinks a door; he jumps from a bridge, because he thinks the railing is a person who wishes to hinder him from advancing further. His speech is difficult, often bradyphasic, sometimes atactic, only very exceptionally is there a condition similar to the syllable-stumbling of the paretic. The result is suicide in from five to ten per cent. of such cases.

### Somatic Symptoms.

The trembling reaches not only to the fingers, but is diffused over the entire body, especially to the tongue, the eyelids, the eye-muscles. The trembling is rapid, eight to ten oscillations per second.

Pareses and paralyses generally develop only when a **neuri-**

tis is produced by alcoholism. The sensory nerves in the beginning of the disease show hyperesthesias and paresthesias, later hypesthesias; in the great majority of cases, analgesia.<sup>1</sup>

The tendon reflexes are prompt in new cases, frequently become weak during the course, and may disappear entirely in pronounced neuritis. The cutaneous reflexes are generally unchanged; sluggishness of pupillary reaction is frequent, but, on the other hand, the Argyll-Robertson pupil is very uncommon.

Epileptic spasms, which appear in delirium tremens, may belong to an epilepsy which has already ceased (alcoholism is often found in epileptics). Sometimes the delirium tremens begins with an epileptic seizure. The outbreak is caused by such a seizure, or it may be the first symptom of the alcoholic brain affection. Finally, epileptic seizures announce the fatal termination.

The blood shows (recognized by venesection) an increased content of fat (piarhemia). The fatty contents of the blood, which amount normally to 2 to 2½ per cent., may increase to 4 to 11 per cent. The pulse is small, frequent; the febrile form of delirium tremens shows even in the beginning 130 to 160 pulsations to the minute. The temperature of the body shows no essential deviations under ordinary circumstances. If it falls under 96° F. collapse is to be feared, and if it rises over 100° F., one must reckon on a complication with other diseases (pneumonia). The urine often contains albumin (Leipmann found it in 76 per cent. of all cases; Hertz found constantly acute nephritis, and considers this the primary disease). Diaphoresis is regularly increased. Besides these phenomena, in the great majority of cases, the common somatic symptoms of chronic alcoholism may be shown, as atheroma of the arterial system and degeneration of the muscles of the heart, fatty liver, cirrhotic liver, and chronic Bright's disease.

Delirium tremens usually attacks men from thirty-five to forty-five years old, but appears also in children and old men. Women are rarely attacked by it; the mortality lists show that for ten fatal cases of delirium tremens in men, there is only one in women.

<sup>1</sup> Schulz. Neuritis der Alcoholisten. *Neurologisches Centralblatt*, 1885.

The *accidental cause* for the breaking out of delirium tremens is formed by taking away the liquor, the most diverse internal diseases (especially pneumonia), injuries to the head, fractures of the bones, also psychic traumata (anger and the like), finally, an epileptic seizure. Breathing alcohol fumes may cause delirium tremens, as well as the use of alcohol.

The *results* of delirium tremens are:

1. Recovery, which is effected either after a critical sleep which may last from thirty to forty hours, or it may develop gradually. Seventy-five per cent. of the deliriant recover.

2. Transition into chronic alcoholism.

3. Death, which, in Germany, takes place in about 12 to 15 per cent. of the cases (pneumonia, self-inflicted injuries, acute intestinal troubles).

Sometimes this is brought about by suicide under the influence of sense deceptions and delusions.

The *pathological anatomy* of delirium tremens does not show special characteristic changes in the brain. In severe cases a diffuse degenerative process, affecting the cerebrum diffusely, has been found; it has also been observed in the cerebellum and in the centripetal paths. The central gray matter shows a predilection for hæmorrhagic infiltration (Bonhöffer, *Monatschrift für Psychiatrie*, vol. v.).

*Diagnosis.* Delirium tremens may be mistaken for:

1. *Deliria of exhaustion* after acute diseases. Here the anamnesia, the absence of characteristic organic changes of chronic alcoholism is generally decisive. The same is true of

2. *Septicemic deliria*. One must think of complications with alcohol if there is an external wound and the anamnesia shows the abuse of spirits.

3. *Mania* in which the hallucinations, if they are indeed present, do not reach the extent they do in the alcoholic psychosis.

4. The maniacal stage of *paresis*, but which invariably shows the characteristic paralytic symptoms.

In both the last cases one will have to compare the complication of these psychoses with alcoholism.

5. *Post-epileptic psychoses* in the cases in which an epileptic



seizure precedes the delirium. Here stupefaction is apt to be greater, and the chances of its avoidance less.

*Treatment.*<sup>1</sup> The most important task of this is prophylaxis in the strife against alcoholism. Of prime importance in the treatment of the deliriant is the most careful watching, on account of the dangerousness of the patient for both himself and those around him; thus rest in bed is the best treatment. In some cases it is possible to obtain a long sleep by a dose of 3, 4 or 5 grams of chloral hydrate, and by this to prevent the attack. Besides this, we may recommend opium (10 drops every two to three hours, with increasing doses), or pure opium or morphine; further, bromide of potash in daily doses of 10 to 12 grams, zincum aceticum 4 to 6 grams in 180 aqua, daily; digitalis in greater or less doses, apomorphine, strychnine injections in doses of 1 to 2 mg., or atropine injections in doses of  $\frac{1}{2}$  to 1 mg. In some cases one may obtain an improvement by cold shower-baths or by evoking an active diuresis by diuretin.

Aside from this, one may hope that an expectant treatment with baths, cooling drinks and some alcohol may lead to recovery.

Further, an alcohol psychosis may run under the type

(a) Of *alcoholic melancholia*. After acute excesses there may arise on the basis of chronic alcoholism a melancholic state, with self-accusations, depressive delusions, corresponding hallucinations, and symptoms of stupor which pass away in a few weeks.

(b) Of *alcoholic hallucinatory paranoia*.<sup>2</sup> (*Acute hallucinosis of the drinker*, Wernicke.) A mania of ideas of detraction develops, which is quite often combined with megalomaniacal ones. Vivid auditory hallucinations inaugurate the pathological type and play the most considerable part in its course. Severe injuries, common words of abuse, threats of severe punishment, constitute the contents of the auditory hallucinations. The patient may also say that the voices and images are made to drive him insane, or to render him harmless. The delusions here develop especially in two directions; on the one side, as jeal-

<sup>1</sup> Fürstner. Zeitschrift für Psychiatrie, vol. xxxiv.

<sup>2</sup> Ilberg. Neurologisches Centralblatt, 1890, p. 360.

ous delusion, where quite often real occurrences are distorted in an insane manner (the wife has repulsed her husband, who is always drunk; she has, perhaps, formed relations with another), on the other side, the delusions turn to religion; the patient believes that he is called by a divine voice to do certain things.

With this, the patient is not essentially disturbed in his orientation, and often, if he does not bring forward his system of mania and his hallucinations, which mostly affect the auditory or visual senses, makes the impression of being a man of understanding who is the victim of intrigues. Anxiety is almost constantly present with this condition. The course of this paranoia is sometimes very stormy; often connected with hallucinations in all or almost all of the senses with violent emotions of apprehension, and sometimes ends suddenly after eight days or three to four weeks. In other cases the course is protracted and lasts six weeks or a number of months. Sometimes this psychosis passes over into incurable chronic paranoia.

This alcoholic form is distinguished from primary functional paranoia by the emotions in this being less reserved; consequently the disposition is changing, while the intelligence and memory are generally not retained as in that primary disease. The anamnesia and the organic symptoms of alcoholism are of diagnostic importance.

### *3. Chronic Alcoholic Psychoses.*

The chronic alcoholic shows, in respect to his mental condition:

1. A certain degree of mental weakness, which expresses itself especially in lack of energy and limitation of the judgment.

2. A weakening of memory.

3. A disturbance of the moral feelings. Among the first symptoms of the chronic alcoholic is his indifference to his own interest, towards what was dear and sacred to him before, to his calling, and his friends. He no longer recognizes the scruples which his social position imposes upon him, he loses the conception of the honor of his station, his thoughts and actions are only for the gratification of his passions. From this, immoral transactions often result; among the poorer classes,

begging and stealing to buy liquor; among the well-to-do, deceptions, forging checks, and the like, to obtain means for gratifying their passion which labor in their occupation no longer furnishes. Meanwhile, acute and subacute psychoses appear in the chronic alcoholic as they have been described above, and which make the pathological condition worse.

In the further course, a state of dementia develops, quite often complicated with acute symptoms of fresh intoxication.

This state of dementia, which may be connected with melancholic and hypochondric, and also with megalomaniacal ideas, sometimes shows paralytic symptoms also, difficulty in speaking, inequality of the pupils, weakening of motility, disturbed gait, exaggeration or absence of the tendon reflexes, so that the clinical type of a paresis may arise (*alcoholic pseudo-paresis*).

Of diagnostic importance is the lack of the paretic disturbance of speech, the reflex rigidity of the pupils, the anamnesia (misuse of alcohol, lack of preceding syphilis), the progressive character (not present, as a rule, in alcoholic paresis), the improvement of the condition with elimination of alcohol, so that apparently incurable conditions of idiocy may pass into recovery with a defect after a long and wavering course. Moreover, the combination of alcoholism and paresis must be considered. Dissimulation is quite frequent in chronic alcoholism. Patients deny everything which may incriminate them, represent themselves as innocent victims who have never done anything wrong.

*Etiology.* 1. Heredity plays an important rôle. According to Lewis, in 64 per cent. of the cases the father or the mother of the alcoholic was an alcoholic also. It is not necessary, then, to think of a transmission of the desire for drink, but of an inherited weakness of the nervous system or loss of the power of resistance which causes the patient to yield readily to alcohol, in emulation of parental example.

2. Imitation of others in later life, especially in certain occupations, to alcoholism (stone masons, bricklayers, and kindred trades).

3. Of special importance in the chronic misuse of alcohol is the impulse to stimulate the nervous system after the use of

alcoholic beverages has been begun by momenta 1 and 2. The want of the ordinary stimulus causes a sort of mental vacancy, abnormal physical sensations, disagreeable feelings.

4. The use of alcohol has been begun by many through first using it as a means to obtain sleep or to quiet pain.

It is not known why one can consume a large quantity of alcohol with impunity, and another be injured by the use of only a small quantity, and why there is complete intolerance in many individuals. Hereditary conditions undoubtedly play a prominent part in this connection.

The *results* of chronic alcoholism are:

1. Improvement with inclination to relapses.
2. Incurable mental disease.
3. Death by organic changes which alcoholism has provoked (heart and kidney diseases) or by suicide.

### **Pathological Anatomy.**

The chronic alcoholist often exhibits hyperostosis of the cranium, but sometimes also attenuation of the cranial bones, external and internal pachymeningitis, very often hemorrhages into the membranes, osteomata of the dura and pia, very large Pacchionian bodies, changes in the walls of the arteries of the brain (hyaline fibroid degeneration), hypertrophy of the neuroglia, degeneration of the ganglion cells—all in all, therefore, a finding which is also observed in many other organic mental diseases. One often finds degenerative neuritis in the peripheral nerves.

The organs of the body show the well-known changes of chronic alcoholism, especially atheroma of the vascular system, dilatation of the heart, fatty liver and cirrhosis of the liver, kidney changes, chronic catarrh of the gastro-enteric tract.

The treatment, as a first consideration, must regard prophylaxis, which must be attained, not by punishment and the courts, but by good example, instruction, and a general betterment of the hygienic conditions, especially in the nutrition of the common people. Asylums for drunkards are an aid; placing the alcoholist under guardianship will be sufficient in many cases to arrest the drunkard in his course. The treatment by medicines has already been mentioned.

**(b) Morphinism.<sup>1</sup>**

Bertrand first used morphine injections in Germany in 1856; the first communications on the abuse of morphine date from the year 1864. Since then morphinism has had a frightful and devastating career.

The morphinist is a man of a double personality: After the injection, he is in good humor, conciliating, capable of labor; after the cessation of its action he is restless, repulsive, unable to concentrate himself, dull and apprehensive. A new injection reanimates him. The longer the morphinism continues, the shorter become the intervals between the injections and the shorter the euphoric stage.

The most prominent pathological mental symptom which is brought forth by the abuse of morphine, is the perversion of the moral feelings, as has been described in depicting the chronic alcoholic. The morphinist is a fiend. Faith and belief and honor have become subordinate in his consideration. Loss of intelligence and energy follow in a corresponding manner. His memory generally remains good. The alcoholic is distinguished from the morphinist in that the former easily transfers his ideas to the motor sphere which is characteristic. This does not take place with the morphinist (Kraepelin).

The ideas of detraction which accompany the later stages of morphinism in most cases develop to a true delusion of attention, and may rise to a delusion of persecution under the type of paranoia hallucinatorium. Hallucinatory states of excitement may appear transitorily before the development of this chronic condition.

The physical symptoms of chronic morphinism manifest themselves, above all, in general emaciation, insomnia, obstinate intestinal obstruction, trembling of the tongue and hands, weakness and ataxia of the arms and legs, contracted pupils with conjunctivæ generally reddened (the pupils are spasmodically contracted, Gräfe). Accompanying these is loss of appetite, the tongue feels rough and dry, the teeth are carious and fall out, the skin is sallow, yellowish, brittle, on it there are scars, ab-

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<sup>1</sup> Erlennmeyer, 1887. Third edition.

scesses, indurations in consequence of the injections, sometimes also blue flecks as precipitates of small pieces of metal from the canula of the syringe. Moreover, morphinists complain of seeing sparks, roaring in the ears, abnormal feelings of taste and smell, and paresthesias. Pollutions and erections are wanting, as well as sexual desire. In women there is often amenorrhea. Some morphinists, left to themselves, die from cachexia, others commit suicide like the alcoholicist.

*Etiology.* According to Pouchet, 40 per cent. of all the morphinists are physicians, and the wives of physicians also constitute a considerable percentage. Besides physicians, druggists often become morphinists. Morphinism, as a rule, affects those hereditarily tainted, who have less energy successfully to oppose the continued use of the drug. The misuse of morphine is called forth: 1, by continued physical pains; 2, by insomnia; 3, by general ill-feeling, sorrow, care; 4, by bad example, which is especially true of physicians' wives. The pleasurable sensation which the injection produces, the cessation of unrest and anxiety following, urges to the second injection when the effect of the first has worn off, and thus necessitates an increase of the dose. New-born children from morphinistic mothers sometimes show symptoms of abstinence with collapse.

The largest daily dose of morphine which has been observed in morphinists amounted to 14 grams (Jaquet).

In regard to the *diagnosis* of an existing morphinism, if denied by the patient, it can be verified by the appearance of the skin, which is of the utmost importance, and the presence of the above-described changes conditioned by the injections; further, by the detection of morphine in the urine. Observation shows also in the continued use of morphine a striking change of the disposition, which is euphoric or excited when the patient is under the influence of the drug, irritable and irascible when hunger for the drug sets in.

The *treatment* of morphinism has, for its prime object, the breaking up of the habit. The morphine syringe should not be trusted to any patient, not even to the attendant. With the high percentage of morphinistic physicians, the effect of this prophylaxis will always be limited.

The weaning of the morphinist may be effected by sudden,

rapid or slow withdrawal. Which method is best in a given case depends, firstly, on the usual dose; secondly, on the condition of the strength of the patient; and thirdly, on the cause which has occasioned the morphinism. If violent pains still continue, as, *e.g.*, in carcinoma or tabes, a sudden or rapid withdrawal is not possible before one has gradually substituted some other anodyne for the alleviation of the pain.

The withdrawal is best and safest in an institution. Morphinists understand so well how to deceive physicians and attendants that only in the secure conditions of a closed asylum, but sometimes not even there, is it possible to deprive the patient of his morphine.

During the treatment by withdrawal, in a majority of cases greater or less phenomena of abstinence appear, which rest, according to Marme, on the toxic action of oxide of morphine formed in the body by the chronic misuse of morphine (a product of morphine, not excreted, which is soluble with difficulty), and this is not inhibited by the addition of new morphine. Other phenomena of abstinence are founded on a hypersecretion of hydrochloric acid in the stomach after the withdrawal of morphine, which may be shown by the aid of the stomach tube (hence pumping out the stomach and administering alkalis is indicated).

The symptoms of abstinence consist of vomiting, yawning, sneezing, profuse perspiration, twitching of single muscles, precordial anxiety. The pupils become dilated, quite often dysarthric disturbances of the speech develop, also violent dry coughing, changeable pulse, and generally subnormal temperature. The patient is anxious, excited, wishes to die, and sometimes attempts suicide. At times there are states with hallucinations and delusions as in alcoholic delirium tremens.

Erections and pollutions appear in men during the period of abstinence, and in women an inclination to sexual intercourse.

If symptoms of collapse appear, subcutaneous injections of caffeine-natrium salicylicum are recommended, 0.2 to 0.4, also infusions of saline solutions; sometimes an injection of from 0.02 to 0.05 of morphine cannot be avoided.

The inclination to suicide should be especially guarded against.

If the morphine is successfully withdrawn, the patient will need long, careful watching before he can be considered cured.

Insomnia, physical pains, and unfavorable social surroundings condition the recurrence to morphine in the majority of cases, so that the percentage of morphinists who may be regarded cured must be considered small. One often finds morphinism connected with alcoholism and cocaineism.

### (c) **Cocainism.**<sup>1</sup>

Cocaine was first employed by Koller in 1884 as a local anesthetic in ophthalmology. The abuse of cocaine proceeded from its use as a local anesthetic for pain (cocainizing the gums, the nose, its use in vaginismus), then as a consequence of morphinism. The cocaine syringe was heralded at first as an antagonist to the morphine syringe. The symptoms of chronic cocaineism are general exhaustion, decrease of the body weight, disgust with and incapability of mental labor, diminution of the intelligence, forgetfulness, insomnia, acceleration of the activity of the heart with small and filiform pulse, sometimes spasms in single muscles.

Occasionally a mental disease develops on this basis, which runs under the type of delirium hallucinatorium with many sense deceptions, especially in the visual tract. A feeling of foreign bodies under the skin is frequently observed, which continually change their location, now in the form of little balls, now of small kernels, fine powder or the finest dust (Magnan's symptom). Sometimes there arises on the foundation of chronic cocaineism the type of a paranoia hallucinatoria with systematized ideas of persecution, hallucinations of vision and audition.

The symptoms of cocaineism are more obstinate and severe than those of morphinism. Cocainists, as a rule, are not able to pursue their occupation as long as morphinists. Morphine and cocaine, used together, are most deleterious.

The *treatment* is essentially the same as for morphinism. Noteworthy phenomena of abstinence do not appear as a rule in cocaineism.

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<sup>1</sup> Mannheim. Neurologisches Centralblatt, 1891.



### Appendix.

Of the other chronic intoxications with organic poisons, *chloralism* should be mentioned, which shows, besides considerable emaciation and diarrhea, decided cutaneous eruption (urticaria, erythema, papulous exanthemata, petechiæ); *Chloroformism*; *Etheromania*; *Absinthism*, whose symptoms Magnan gives as attacks of dizziness, hallucinatory deliria, amnesia; chronic use of opium; *Cannabism*, especially as practiced in Egypt; *Nicotinism*. Further, mention should be made here of the chronic intoxications with preparations of bromide, sulfonal, trional, stramonium (the chronic intoxication may arise from the constant use of stramonium smoke in asthma; it calls forth auditory hallucinations and the delusion of attention with pressure on the head, feeling of pressure in the ear and in the foot articulations), with atropine, hyoscyamus, salicylates (with profuse sweats, roarings in the ears, difficulty of hearing, mydriasis, strabismus), antipyrin, and paraldehyde.

All these poisons may bring on acute mental disturbances which disappear quickly, but they may also generate subacute ones, generally in the form of delirium hallucinatorium or of acute hallucinatory paranoia. Chronic absinthism often leads to dementia, as does also cannabism. Chronic intoxications with sulfonal, trional, and with bromide may bring on states of mental weakness, considerable loss of memory with ataxia, pareses, and loss of the patellar reflexes, so that the external type is that of paresis. The anamnesia and the further course, which shows the gradual disappearance of the symptoms with the removal of the drug, assure the diagnosis.

#### 4. Psychoses which are Brought on by Inorganic Poisons.

*Acute carbonic acid gas psychoses* sometimes shows the type of acute dementia. If there are paralyses present in such psychoses, these point to localized foci of softening in the brain, which are conditioned by the intoxication.

*Chronic carbonic acid gas* intoxication, which appears with the symptoms of hallucinatory paranoia, or also a pseudo-paresis, has been described by Moreau as it presents itself in bakers and cooks; psychoses have also been observed from *Gaz pauvre* (by

passing air over heated anthracite there is a mixture of nitrogen, carbonic acid gas, carbonic acid, and a small quantity of carbohydrogen).

Carbonic disulphide psychoses<sup>1</sup> may appear as a state of depression which may rise to stupor, or under the type of delirium hallucinatorium. Generally there arise states of mental weakness, and with these symptoms of paralysis or ataxia are often associated.

*Iodoform* may generate an acute psychosis under the type of delirium hallucinatorium with anxious unrest, or of great confusion, or it may also run under the type of melancholia. One should always consider carefully in such cases whether the disease which necessitated the use of iodoform, or the shock which followed the operation, forms the etiological momentum.

Chronic *saturnism* may generate:

(a) A psychosis which runs acutely under the type of delirium hallucinatorium.

(b) Epileptic seizures with their peculiar pathological psychic symptoms.

(c) Diminution of the intelligence and the memory, by which the clinical type of paresis may be evolved in connection with the paralytic states peculiar to lead-poisoning. One should observe diagnostically in this connection that the dementia in saturnine paralysis is never of so high a degree as in paresis; further, that electric examination in lead-poisoning shows changes which are absent in paresis; that examination with the ophthalmoscope shows neuritis and neuroretinitis, retinal apoplexies, and perivascular changes (Hirschberg), which are foreign to the paresis in this symptom-complex.

Saturnism may also beget uremic psychoses through contracted kidneys.

Chronic *mercurial intoxication* often introduces states of considerable fearfulness, easy irritation by external impressions, anxiety and insomnia (erethismus mercurialis). In rare cases a psychosis which may lead to mental weakness with depressive symptoms develops from this condition when the predisposition is present.

<sup>1</sup> Köster. *Neurologisches Centralblatt*, 1898. Laudenheimer, the same.

## V. THE ORGANIC PSYCHOSES.

### 1. Diffuse Diseases of the Brain Cortex.

#### (a) Progressive Paralysis of the Insane.<sup>1</sup> (Paralytic Dementia, Paresis, Softening of the Brain).

Although cases were reported in 1672 by Willis and in 1798 by Haslam which may belong to paresis, yet it was Bayle who inaugurated the history of the progressive paralysis of the insane by his inaugural dissertation in the year 1822. He called the disease chronic meningitis, and thought that the mental as well as the somatic pathological symptoms developed from this as a pathological unit.

At a later time the strife was again taken up as to whether the psychic disturbances and the somatic changes really belonged to *one* disease, or were rather a symptom-complex. The Congress of Physicians for the Insane, held at Paris in 1867, confirmed the unity of the pathological symptoms and considered paresis as a special clinical entity.

Although at the time there was no dissent concerning this fact, later researches strove to separate forms which were conspicuous anatomically and clinically, from the great number of the cases which were regarded as paresis.

In by far the great majority of cases the pathological type develops in the following manner:

#### 1. The *demented* form of paresis.

*The first stage.* This consists preferably in the symptoms of the pathological change of the psyche, or in those of the body, or, finally, in the contemporaneous development of both mental and physical abnormalities.

(a) The patient becomes depressed, irritable, violent, brutal without sufficient cause, laying violent hands on himself. With this, his neglect of certain social rules is conspicuous; he comes into a room with his hat on his head, he appears in society with disordered dress, his face and hands are dirty, he treats women

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<sup>1</sup>Mendel. Progressive Paralyse. Monographie, 1880. Binswanger, Deutsche Klinik, 1901.

indecently and without respect both in his words and gestures, where before he was reserved; contrary to his former habits, he frequents saloons and low resorts. In many cases, even in this stage, an inclination to immoral actions develops whose execution brings the patient into contact with the criminal law (offenses against decency, exposure, theft, and the like).

Meanwhile there are depressions, anxious states, and considerable feeling of illness. Sleep is diminished usually both as to duration and soundness. In other cases, on the contrary, there is morbid sleepiness, which sometimes comes on in the form of attacks at unseasonable times and places (narcolepsy).

These changes are often observed on intimate acquaintance with the patient; sometimes, even then, they are not recognized as pathological, but attributed to other circumstances. The patient often works at his occupation as before, that is, he performs his ordinary daily task in the prescribed way. But if unusual obstacles are encountered, he soon shows his defective intelligence, while, on the other hand, energy for new enterprises is wanting. If he attempts them notwithstanding, he generally fails because he lacks the mental power.

A consciousness of disease appears transitorily, especially if the patient notices the diminution of his memory or if others point out to him his peculiar condition. He "has a presentiment of the on-coming softening of the brain" and sometimes commits suicide when he recognizes it.

*Somatic* changes are not present as a rule, or are so inconspicuous that the family physician diagnoses "neurasthenia," and even the psychiatrist who may be called, though he recognizes the danger, cannot make a positive diagnosis, because of absence of all objective symptoms of the peripheral nervous system.

(b) The disease begins with reflex rigidity of the pupils, myosis or mydriasis in one or both eyes, alteration of the tendon reflexes (too weak, absent, sluggish reaction, while the return is not lightning-like, but lax, slow, or too strong, patellar or foot clonus), analgesia, especially in the leg, exaggeration or diminution and extinguishment of the sexual reflexes, easy fatigue of the legs, intermittent limping. There is now hesitation

in the speech, especially in excitement, sometimes obvious paralytic disturbances of the speech.

Notwithstanding, the patient manages his business without trouble, but shows his inefficiency when he confronts new problems. Certain hypochondric complaints, some irritability, disturbances of the sleep are seldom lacking. The diagnosis here wavers between tabes and paresis, especially if the patellar reflexes appear to indicate the first and the mental weakness is not conspicuous.

2. The symptoms described under (a) and (b) develop contemporaneously; the diagnosis may be made with confidence even in this stage. On taking up the anamnesia it appears generally that syphilis was present about ten to fifteen years before the beginning of the present disease; that other severe diseases and those of the nervous system have not in the majority of cases preceded the present difficulty.

*Second stage.* The mental weakness is clearly defined, the memory fails considerably, the patient shows indifference to those about him and as to his business, his speech changes more and more, the paralytic disturbances of speech persist. There are now paralytic attacks, sometimes in the mildest form, as dizziness or temporary loss of consciousness, but always with the evident effect of further weakening the mental power. The somatic symptoms are partially unchanged, in part they become stronger; in particular, the weakness or ataxia of the extremities increases. The patient, on account of his intellectual weakness, is incapable of mental labor, and also unfit for bodily exertion from the paresis or ataxia of his extremities.

*Third stage.* The mental weakness sinks to dementia, memory has almost vanished, the patient can no longer answer the simplest questions, becomes wholly indifferent. The muscular paralysis demands the help of others in carrying out the simplest movements, urine and feces pass involuntarily. Paralytic attacks make the helplessness of the patient still worse. He dies in such an attack, or of an aspiration pneumonia, or of an intercurrent disease.

During the course of this demented form there appear occasionally depressive or maniacal delusions, which may exist for a greater or less time alongside the other symptoms. However,

the pathological type is not influenced by them; these ideas are generally only produced when the patient is directly questioned concerning them.

2. The *classical* or *typical* form of paresis.

The first stage may show all the above-described varieties; often it is imperfectly developed and there exists only a certain psychic irritability with definite hypochondric impressions. As the second stage, there appears a state of *hypochondric* or *melancholic depression*, which, according to the degree of its development, may waver between the mild form of hypomelancholia or hypochondria to the highest grade of stupor, and the delusions may be quite similar in content to the typical melancholia just described. Characteristic, however, are the symptoms of mental weakness, which are connected with those delusions, also the above-described somatic symptoms, the change of the tendon and visceral reflexes, as well as the disturbances of speech which have already revealed themselves very plainly.

The third stage—*maniacal exaltation*—generally develops gradually from the second; it is distinguished by the so-called efflorescent megalomania, whose growth knows no limits. Its further development, together with the motor excitation, leads to *paretic raving*. Paralytic attacks then quite often interrupt the agitation and bring the patient, with increasing dementia and paralysis, into the fourth stage, the *stage of dementia*. It is the same as the above-described third stage of the demented form, and entails only the nonsensical megalomaniacal ideas of the earlier stages; but even these are brought forth without excitement as something indifferent and with halting paralytic speech.

3. That course is described as the *agitated* form of paresis in which the melancholic and hypochondric stage of typical paresis is absent and the disease, after the first stage, passes directly into the third. Sometimes the symptomatic type of acute delirium appears in an especially violent course, complicated with somatic diseases.

4. In the *depressive* form, a maniacal stage is developed, the hypochondriaco-melancholic delusions rise to excessive height, quite often to micromania.

5. If interchanging depressive and exalted stages appear,

the paresis may simulate a circular psychosis (the circular form of paresis). Increasing mental weakness and the somatic symptoms confirm the diagnosis.

6. Where the psychic symptoms of paresis range themselves for a long time alongside an existing tabes, even a decennium or longer, one speaks of an *ascending* paresis.

Not only the tabes, but also the associated paresis, is conspicuous by a long course. From these cases are to be distinguished those in which tabetic symptoms appear with pathological phenomena or where the tabetic symptoms quickly follow the paretic. In these last cases we do not have pathologico-anatomically a pure posterior column sclerosis (*tabo-paresis*).

### Special Symptomatology.

1. *Hallucinations*, as a rule, first appear in paretics in the later stages, exceptionally hallucinations of vision appear in the first stage; "Snow is falling before my eyes," "the devil is in sight." Auditory hallucinations first appear in the later stages generally, in the state of raving or frequently in the depressive forms; hallucinations of smell and taste are quite frequent in the raving of paretics, while hallucinations of the coenesthetic sense distinguish the hypochondric stage of paresis.

2. *Mental weakness* is the finger mark which is seen from the beginning to the end of the manifold picture of paresis. It is sometimes striking how the paretic, still occupied in his business and considered by his associates as simply nervous, wholly fails in simple calculations, as 13 times 13, or in computing the interest of a given sum at  $4\frac{1}{2}$  per cent. for one year. Either he cannot solve the problem or his solutions are faulty.

He first loses the highest intellectual conceptions, those which he acquired last, while external forms remain longest (in physicians, *e.g.*, the writing of prescriptions). The delusions of the paretic are distinguished, both after the depressive and maniacal states, by their nonsensical exaggerations and arbitrary excesses. Ideas of persecution and megalomania may combine in the same manner as in paranoia.

The hypochondric impressions which are at first present change, during the further course, to euphoria, even in the

demented form of paresis. Of the intellectual feelings, the ethical and esthetic suffer regularly even in an earlier stage.

In this respect the erotic phenomena are to be mentioned, which cause the patients, in the absence of ethical feelings, to bring public women into their families or to abandon themselves to shameless excesses.

Although the memory in the earlier stages of paresis often shows no appreciable defect, it is essentially weakened in the later stages, the power of attention vanishes, and finally the paretic finds himself in a situation in which, separated from his past, and incapable of acquiring anything new, he lives entirely in the gratification of sensual desires.

Syllable-stumbling is characteristic of paresis. While single words and syllables are plainly pronounced, when separated it is not possible for the patient to arrange them in euphonious order in a phrase, especially if it be a long one. The vowels or all the syllables are mutilated, single vowels are repeated at unsuitable places, others are omitted. This is very evident if long words are given the patient to pronounce: instead of "artillery" we have "ratrillery," instead of "Constantinopolitan" "Costapinopalic," instead of "San Francisco," "Fran Sanfis—Fran Sanfrisco."

These disturbances of speech sometimes appear more clearly in reading or reciting than in repeating, especially if the patient has already practiced the last. Often, hesitation of speech has been observed in paretics, even before the appearance of the syllable-stumbling, especially when it has been difficult to pronounce single definite consonants at the beginning of the word; speech is therefore hesitating, retarded.

The disturbances of speech as mentioned appear at a very early stage in the majority of cases of dementia paralytica. If they do not make the diagnosis of paresis absolutely sure, since they occasionally appear in other circumstances (*e.g.*, in alcoholism under the influence of acute intoxication, with hyoscine, duboisin in psychic patients), nevertheless the utterance of Esquirol, "disturbance of speech is a fatal symptom," is correct with very inconsiderable limitations. Disorders of speech are not always uniformly present; sometimes they disappear in repose, while they are more accentuated during excitement.



Syllable-stammering is not the only form of speech-disturbance to be noted, for in the later stages of the disease occur weakness of memory and troubles of the articulation (dysarthria), which complicate the speech still further.

The patient begins to speak, does not find the right expression for what he wishes to say, and breaks off for that reason; begins anew the sentence which has not yet ended, now forgets what he wished to say, looks around questioning, and closes the sentence with a phrase which has no connection with what was first said. He often forgets the last syllable of the words he is speaking.

In advanced cases, the muscular fibers of the tongue, lips, face, sometimes of the lower jaw, finally begin to tremble when the patient opens his mouth to speak; these tremblings are especially conspicuous in the levator labii superioris, the zygomatic muscles, the orbicularis palpebrarum, and are so strong sometimes that the whole countenance seems convulsed with spasmodic twitchings.

After some seconds, sometimes after a minute of effort, the first syllable is uttered.

The tone of the voice is often changed with this: rough, nasal, conspicuously deep.

The writings of the paretic exhibit mental weakness and delusions in their diverse form. The maniacal excitement is shown in the manifold underscoring of the words, the exclamation point, the ordering of letters forwarded by "wire," by "reed post," "per express."

Literal and verbal paraphasia correspond to syllable-stumbling.

The script itself may be atactic (excessively elaborated letters besides small, zigzag-shaped ones with thick ground lines) or trembling.

The reading corresponds with the speaking. Sometimes paretics read something which is not in the book and which has no connection with it. Sometimes dyslexia is observed: after a few lines the patient cannot read further, because it is difficult, because he feels badly.

### Somatic Symptoms.

1. *Motility.* At an early stage appear, with paresis, spasmodic symptoms in the form of gnashing of the teeth, chewing motions, spasms of single muscles, even like writers' cramp. The symptoms of paralysis first show themselves as quick twitching in the facial muscles, in those of the tongue, especially in attempts to speak or to protrude the tongue, then in the hands, also in the musculature of all the rest of the body, often as fibrillary twitchings. Choreic movements are rare. There appear early inequality of the clefts of the eyelids, weakness of orbicularis palpebrarum, difference of the pupils (myosis in about 60 to 70 per cent. of all cases, mydriasis more rarely), unequal innervation of the faciales, tongue protruded obliquely. In the further course the paresis attacks the entire musculature, and finally reaches paralysis. The walk of the paralytic, which is a paretic or paretic-spastic (with exaggerated tendon reflexes) or atactic (with diminished or absent tendon reflexes), becomes finally impossible. Hemiplegias and monoplegias also appear in connection with the paralytic attacks, are sometimes produced by paralyzes of single nerves as a result of a peripheral neuritis (peroneus paralysis). Pareses and paralyzes of the hands, paresis of the sphincters, and paralysis of all the flexor muscles characterize the end stadium.

The electrical excitability of the muscles and nerves is not changed in paresis. If there is a change in the electrical reaction, complications should be suspected.

2. *Organs of sense and sensibility of the skin.* Atrophy of the optic nerve is present in about 12 per cent., especially in the tabetic form. Constant and even progressive central scotoma with coloring of the entrance of the optic nerve, hemianopsia in connection with paralytic attacks are sometimes observed. Disturbances of audition are rarely present, more frequent are anosmia and ageusia, also in the earlier stages. Neuralgiform pains (sciatica) often appear in the first stage, more or less diffused, anesthetics and analgesias very early, especially of the lower extremities. Yet one should be careful not to assume analgesia from the patient's declaration that he "feels no pain" from the prick of a needle; the maniacal patient, espe-

cially, denies the pain in order to prove his health or his power of resistance.

3. *Reflexes.* The condition of the patellar reflexes has already been mentioned. The Achilles tendon reflex and that of the anconeus are often found diminished or absent in the beginning of the paresis.

The skin reflexes are often exaggerated in the first stage, weak in the later stages. Babinski's reflex is often found on one or both sides. The abolition of the pupil reflexes for light is one of the earliest and most important symptoms of the visceral reflexes.<sup>1</sup> Coincidentally appear, also, the paradoxical and inverse pupil reactions.

The vesical reflex, as a rule, suffers early; in the later stages its paralysis, with paralysis of the detrusor urinæ and sphincter vesicæ, leads to ischuria paradoxa.

The sexual reflex is often normal in the beginning of the disease, sometimes heightened (pollutions), and later habitually becomes extinguished.

4. *Vasomotor and trophic disturbances.* Diminution or increase of the saliva and perspiration is frequent. Some of the phenomena which have been described as trophic disturbances are consequences of uncleanness in connection with the constant anesthesia of the skin (erythema, furunculosis, decubitus).

On the other hand, insignificant traumata in organs previously altered by trophic disturbances may cause wide-spread destruction (decubitus acutissimus may sometimes arise during a night). Fractures of the ribs, fractures of the extremities, arthropathies,<sup>2</sup> hematomata belong in this category.

The weight of the body is apt to decrease very appreciably in the hypochondric and maniacal stages of paresis, but often increases considerably in a certain period of the last stage; then it again diminishes very rapidly, as a general rule, before dissolution, without any reason being found either in diarrheas or in faulty nutrition.

5. The internal organs in very many cases of paresis show no change, syphilitic affections are found only exceptionally.

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<sup>1</sup> Moeli. *Archiv für Psychiatrie*, vol. viii, page 13-18.

<sup>2</sup> Westphal. *Charité-Annalen.*, vol. xx.

The pulse is usually regular; in the later stages the sphygmogram shows anacrotic and katacrotic ascents and the sign of pulsus tardus. The temperature is generally normal, except in the last stage, where it is often subnormal and falls sometimes to 80° F. Elevation of the temperature always points to complications. Peptonuria, diminution of the urea, of the chlorides, and of phosphoric acid is often found.

Menstruation is generally undisturbed, yet the menopause, as a rule, appears prematurely.

6. *Paralytic attacks.* These show themselves in the course of paresis in all stages, often even in the first:

(a) As apoplectiform.

(b) As epileptiform.

(c) As epileptoid.

The first fluctuate in their development between the appearance of a quickly passing motor or sensory aphasia, a transitory condition of weakness in the hand while writing, a quickly disappearing dizziness which may also accompany the symptoms noted and a loss of consciousness, lasting for hours or days, with following hemipareses or hemiplegias, which usually pass away in a few hours or days.

The epileptiform attacks fluctuate between the twitching of single extremities, or the mildest form of a Jacksonian epilepsy, to the typical picture of a classical epileptic seizure, which may pass into a status epilepticus.

Finally, the epileptoid attacks show clouding or total loss of self-consciousness, with complete passivity or impulsive running around without aim or reason, also in the form of twilight states.

Sometimes a state of delirium hallucinatorium is connected with the paralytic attack, which may resemble very much an alcoholic delirium.

The paralytic attacks have a tendency to accelerate the progress of the disease by injuring the somatic and mental functions. Death often follows in the apoplectic attack or in the epileptic seizure.

7. A cytological examination of the cerebro-spinal fluid has been recommended as a means of diagnosis in cases of paresis, and especially in those cases where the diagnosis of paresis

seemed doubtful. Brooks and Clark<sup>1</sup> have published the results of their investigations and their manner of procedure, which are a good index of the work done along these lines, and their results are briefly as follows:—

“After centrifuging and staining the spinal fluid, we have counted from 30 to 50 fields in each case and have looked upon the presence of one or more lymphocytes to a field as indicating a lymphocytosis, while the normal fluids have usually presented one lymphocyte to from 5 to 20 fields. With the counting chamber we have considered anything over 14 or 15 to a cubic millimeter as an increase, while the normal fluids presented from 1 to 4, or less, to the cubic millimeter.

“We have made satisfactory examinations of fluid in 29 cases, 13 of which have been typical paretics, 3 probable paretics, and thirteen suffering from other conditions, from which paresis could be absolutely excluded.

“Of the 13 typical paretics we found an abnormal increase in the number of lymphocytes in 8, or practically  $61\frac{1}{2}$  per cent. If to these we add the three probable paretics, in all of whom there was a lymphocytosis, the result is  $68\frac{3}{4}$  per cent. increased.

“Of the 13 cases other than paretics, 11, or practically  $84\frac{2}{3}$  per cent., presented a normal lymphocyte count. Of the other two, one gave a history of syphilis, some twenty years before, and the other was evidently suffering from a syphilitic and inflammatory condition of the meninges, which condition was cured by treatment with potassium iodide. To recapitulate:  $68\frac{3}{4}$  per cent. of our paretics showed an abnormal lymphocytosis, while in  $84\frac{2}{3}$  per cent. of the cases other than paresis the lymphocytes were normal in number.

“The seralbumin present in the fluid we found to be a variable quantity, and, so far as we were able to determine, bore no particular relation to the number of lymphocytes present or to the presence or absence of dementia paralytica. It was markedly increased, in two cases giving evidence of meningeal inflammation (showing polynuclear leucocytes in the fluid) and in a case of dementia paralytica associated with tabes.”

*Etiology.* Progressive paralysis is a disease which demands

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<sup>1</sup> Medical Record, New York, June 30, 1906.

its victims with increasing frequency. At the beginning of the last century scarcely known, patients afflicted with this disease now fill the sanitariums, a large percentage fill the private institutions and those other public asylums which receive their patients from the populous centers of the state. [The frequency of paresis in America is by no means so great as in Germany. During the year 1904, out of 5788 admissions to the New York State hospitals, 464 were paretics, or 8 per cent. Since 1888, of 84,152 insane admitted, 5697, or 6.7 per cent., were afflicted with paresis.—Ed.]

Paresis is a disease of civilized life, seldom ever appearing among the semi-civilized or uncivilized. It is rarer in the country than in the cities, it affects men much more frequently than women, the ration of inclination being 4 to 1.<sup>1</sup> Among men the so-called better classes are attacked with greater frequency, while among women it is of the poorer population. With men the age of greatest incidence is from thirty-five to forty years. It becomes constantly rarer in later years; it is found after sixty only exceptionally. Observations of paresis in childhood and youth have accumulated in the last decennia.<sup>2</sup> In these cases hereditary syphilis may be demonstrated almost constantly. Paresis in both husband and wife is often observed (conjugal paresis).<sup>3</sup> In about 75 per cent. of all cases of paresis the anamnesia reveals an acquired syphilis on an average of from ten to fifteen years before the outbreak of the disease. Since the population living under similar circumstances and of the same age show only about 15 to 18 per cent. of cases of syphilis, and parallel statistics show similar results in different places, it is not improbable, then, to assume that syphilis plays a considerable part in the causation of paresis. But that it is a tertiary syphilitic disease of the brain or a metasyphilitic nerve lesion, is controverted by the fact that syphilitic changes cannot be shown in the brain or other organs in the great majority of cases; further, because the anti-syphilitic treatment is without results, and, above all, that a not insignificant percentage of cases exist in which syphilis has certainly not preceded the paresis. Syphilis

<sup>1</sup> Jahrmärker. *Zeitschrift für Psychiatrie*, vol. lviii.

<sup>2</sup> Alzheimer. *Zeitschrift für Psychiatrie*, vol. lii.

<sup>3</sup> Mönkemöller. *Monatschrift für Psychiatrie*, December, 1900.

forms only the predisposing momentum, the foundation on which a classical paresis arises in the great majority of cases.

The lesions which really call forth the paresis could not generate the disease unless the nervous system, especially the brain, had suffered a change from the preceding syphilitic infection which makes it incapable of resistance to those lesions. What this change consists of is not known at present; perhaps it lies in the walls of the finest arterioles and capillaries and the disturbances of endosmosis and exosmosis conditioned by them.

In some cases hereditary basis forms the predisposition, but by no means to the same extent or importance which was due to it in the functional psychoses.

The immediate inciting causes lie in a great number of cases in psychic momenta: sorrow, care, disappointed hope, losses suffered, too great psychic exertion for the individual; further, debauches with wine\* and women, but especially the misuse of alcohol; and, finally in single cases, traumata of the head.

The *outbreak of the disease* is never acute, certain prodromata of development always precede it.

The *course* of paresis is invariably chronic, excepting the galloping form, which is generally masked by the type of acute delirium. The disease runs most frequently as the demented form (in about two-thirds of all cases). The cases of classic paresis are becoming constantly rarer in modern times.

The progressive course is often interrupted by remissions, especially in the classic and depressive types, also in the ascending form. The remissions may give the impression of recovery, and may last months, a year or longer. A certain decrease of the former energy and greater susceptibility, as a rule, cannot be misunderstood. Married women sometimes think their paretic husbands healthier psychically under these conditions than they were before the disease appeared.

The *duration* of the disease amounts, on an average, in men from three to four years; in women, from four to five years. Two-thirds of the paretic men die before the end of the second year, exceptionally there is a duration of from eight to ten years, or even longer.<sup>1</sup>

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<sup>1</sup>Lustig. Zeitschrift für Psychiatrie, vol. lvii.

*Results.* The results of the paresis are:

1. Recovery, which is extremely rare, though it has undoubtedly been observed. As a rule, so-called recoveries are only remissions of exceptional duration.

2. Death, which occurs in half the cases in the paralytic attack or by decubitus, cystitis, hypostatic pneumonia, exhaustion; further, by accidents (suffocation in consequence of esophageal paralysis, wounds and their sequelæ), sometimes by self-destruction in the first stage.

### **Pathological Anatomy.**

The most frequent macroscopic finding<sup>1</sup> is the disappearance of the diploe with hypertrophy of the bones of the cranium, greater weight of the calvarium, external and internal pachymeningitis, thickening and simple clouding of the arachnoid (also milky clouding), especially in the cephalic part of the brain, adherence of the arachnoid to the cortex, also to the dura and the calvarium (especially in the region of the central convolutions), atrophy of the cortex, preferably in the frontal lobes, rarer in the other lobes, granulations of the ependyma, external and internal hydrocephalus.

The weight of the brain is generally diminished, the right hemisphere is usually heavier than the left.

Microscopically<sup>2</sup> one finds in the chronically running paralyzes of the brain cortex, increase of the nuclei of the neuroglia, swelling of the glia cells with abundant ramifications, the neuroglia thickened, sometimes transformed into fibers and shriveled. The nerve cells are atrophied, sclerotic, often pigmented, and show loss of chromophil substance. Disappearance of the nerve fibers, especially of the tangential fibers first (Tuczek), is regularly present. There are similar changes in the large basal ganglia, especially in the thalamus opticus (Lissauer), also in the cerebellum (Weigert). The vessels are often atheromatous, hyalin degeneration is rare; in the capillaries there is more or less dilatation of the lumina with enlargement of the nuclei and

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<sup>1</sup> Näcke. Makroskopische Hirnbefunde bei männlichen Paralytikern. *Zeitschrift für Psychiatric*, vol. lvii, 619, 1900.

<sup>2</sup> Binswanger. *Pathologische Histologie der Grosshirnrindenerkrankung*. Jena, 1893.



thickening of the walls (Kronthal), there is often a new growth of the vessels.

Focal diseases are rare.

*The spinal cord*<sup>1</sup> shows regularly changes which have existed for a long time: degeneration of the posterior white columns or lateral tracts, generally combined sclerosis (Fürstner), secondary degeneration of the pyramidal tracts; diffuse myelitis. Degenerative processes of the anterior and posterior roots and of the peripheral nerves, including the cranial nerves, especially the opticus, are frequent.

Whether the described findings have their point of departure in the vascular system (encephalitis interstitialis diffusa), which I accept for the great majority of the cases, and which has lately been advocated by Robertson, or whether it is a primary degenerative process of the nerve elements, or whether, finally, the infective cause attacks vascular walls and nerves contemporaneously, cannot be absolutely decided at this time.

Perhaps the diverse clinical types and the varied course which they follow may be explained by the difference of the anatomical development.

*Diagnosis.* The advanced paretic very often reveals the diagnosis the moment he enters the room by the simple expression of his countenance, his helpless movements, his odd greeting, with the characteristic speech.

In the earlier stage one should observe in the differential diagnosis:

1. The functional psychoses, especially mania, depressive states, circular psychoses, exceptionally paranoia. Here are decisive:

(a) The presence of mental weakness, which is foreign to the functional psychoses before their passing into dementia and which cannot be mistaken even in the earlier stages of paresis.

(b) Above all, the proof of paretic symptoms, especially the disturbances of the reflexes (reflex rigidity of the pupils, absence of the patellar reflexes), and of the disturbances of speech which are peculiar to paresis.

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<sup>1</sup> Fürstner. Archiv für Psychiatrie, vol. xxxiii, 939.

(c) The entrance of paralytic attacks, which in doubtful cases sometimes confirm the diagnosis of paresis.

2. The *intoxication psychoses*. Chronic alcoholism is to be specially mentioned in this connection (see alcoholic pseudo-paresis). In addition, paresis may arise on the basis of chronic alcoholism, and, on the other hand, a paresis may incite to alcoholism by the psychic change.

Of the chronic intoxications the following are important in a differential diagnosis: intoxications with bromide, sulfonal, trional. These drugs may, by immoderate use, bring on dementia, great diminution of the memory and of the attention, loss of the patellar reflexes, ataxia, even a disturbance of speech similar to the paretic. Yet the reflex rigidity of the pupils is wanting. The improvement which will regularly follow the removal of the poison will confirm the diagnosis.

Encephalopathia saturnina may be distinguished from paresis by reference to the anamnesia, the proof of lead colic and lead palsy, the moderate and non-progressive dementia. In this encephalopathia, the paralytic disturbances of speech are generally wanting, also, as a rule, the pupillary anomalies.

Uremia, which may simulate the picture of paresis, is distinguished by the frequent vomiting, by the asthma, by the nature of the urine (albumin and casts), retinitis albuminurica, by the absence of the reflex rigidity of the pupils and the speech disturbance of paresis.

3. In regard to the organic brain diseases the following should be accentuated differentio-diagnostically:

(a) For *syphilitic* brain disease, point continuous paralyses of the eye muscles in the anamnesia as well as in the later stages (only transitory palsy, as a rule, with paresis), neuritis optica (in paresis simple primary atrophy of the opticus, neuritis optica, rare), transitory hemiplegias, transitory and interchanging monopareses and monospasms and frequent changes of the psychic phenomena. There is also generally lacking in syphilitic diseases of the brain a diffuse hypalgesia or analgesia; the disturbances of speech and writing are not so accentuated as in paresis.

If secondary or tertiary symptoms of syphilis are present in the organs or on the skin, they will indicate brain syphilis as

against paresis. At the age of thirty or under, one must think more of syphilis than of paresis.

(b) For *dementia senilis* as against paresis, the advanced age, sixty-five years or over, will be the index; the peculiar disturbances of the memory in which, with good recollection of things long past, the power of observation of what has just occurred has been lost, further, the generally depressed and very irritable peculiar disposition of those suffering from senile decay are characteristic, while the advanced paretic is distinguished mostly by his easy susceptibility. Besides this, senile dementia usually follows a much slower course than paresis, is distinguished by great variations in the psychic condition, absence of paralytic disturbance of speech, and the relative rarity of reflex rigidity of the pupils.

There are, however, cases, especially between sixty and sixty-five years, in which it is impossible to make the diagnosis with certainty.

(c) For focal diseases of the brain, as against paresis, point definite focal phenomena which are wanting in paresis, or which appear only transitorily in connection with paralytic attacks. However, there are also pareses which are complicated with focal diseases (apoplectic foci).

With focal diseases of the brain there is generally present a strong feeling of disease, and it is seldom that so profound a dementia is developed as in paresis.

If multiple focal diseases of the brain and of the spinal cord are present (as, *e.g.*, in multiple sclerosis or in syphilitic brain tumors), the diagnosis may be very difficult or impossible in the advanced stages. Here, generally, only the anamnesia can be decisive.

The *prognosis* of paresis is unfavorable, yet the possibility of the entrance of prolonged remissions should not be overlooked.

The posterity of paretics often show abnormalities of mental development, sometimes they become severely diseased psychically. Quite often physical and mental stigmata of degeneration are found in such descendants in a marked degree.

The marriages of paretics are unfruitful in a relatively large percentage of the cases (about 25 per cent.), while the number of

childless marriages in the population amounts to only 10 to 12 per cent. on the average.

*Treatment.* The paretic suffering from the demented form should, sometimes, in the earlier stages of the disease, be placed in an institution on account of his inclination to immoral actions. This is desirable in advanced dementia when the patient cannot have the necessary attention and care at home.

The depressive and maniacal stages of the disease need treatment in an institution, in the same way as do the patients suffering from melancholia and mania.

If previous syphilis is shown in a paretic, if the dementia is not yet far advanced, and if he has not suffered much in his nutrition so far, one should try the inunction treatment (two to three grams of unguentum cinereum daily until the entire quantity of 120 grams is used).

The cases in which an improvement, or only a stationary period is reached by this treatment or by the use of iodine or ergot, belong to the rare exceptions. Visiting bathing resorts is useless, and injurious both from the excitement of going and of being in strange places.

Baths at 90° F., also with the addition of from 2 to 3 kilograms of common salt, are recommended with home or institution treatment.

Surgical operations should be discouraged (trephining has produced no satisfactory results).

The treatment can but regard the momentary condition, and therefore be only symptomatic. Nutritious food with abundant milk should be provided; careful cleaning of the patient, decubitus if it arises, special care be given to the bladder and bowels are the only indications. In states of excitement rest in bed is recommended; as hypnotics, trional, sulfonal, chloral, and morphine injections are useful.

#### **(b) Senile Dementia, Senile Atrophy of the Brain.<sup>1</sup>**

Senile dementia begins, as a rule, with insomnia, attacks of dizziness which may reach the summit of epileptic states,

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<sup>1</sup> Alzheimer. Sammelreferat in Monatschrift für Psychiatrie, 1898. Wille. Zeitschrift für Psychiatrie, vol xxx. Fürstner. Archiv für Psychiatrie, 1889, xx.

fainting spells, paresthesias of the hands and feet with irascible and irritable disposition, diminution of the memory, especially for recent events, while for past events it is faithful, sometimes astonishingly so. Commingled hypochondric complaints arise, egotistic impulses rule, while altruistic feelings are crowded more into the background. Hence the pronounced avarice towards others, sometimes contemporaneous with senseless lavishness on his own enjoyments. In the last respect especially, erotic impulses arise, and large sums are squandered for the gratification of this passion; sometimes promises of marriage, marriage itself without regard to station or children, proceed therefrom.

Severe psychic symptoms of a pathological nature appear mostly at night. The patient does not go to bed or soon rises, busies himself about the house, locks up everything, barricades himself, has transitory illusions and hallucinations of people who wish to break in or of such as go to the other spouse in order to commit immoral actions during the night.

During the day the patient speaks of the fancied or hallucinated occurrences as facts, while otherwise he seems to be fully oriented and may seem mentally normal externally. On the basis of his pathologically changed relations to the outer world he changes his will quite often, makes new ones; the belief that his children wish his death, or attempt to hasten it, is so heightened that his relatives often argue with him in opposition and try to hinder him from doing many absurd things. The memory, well-preserved for events which took place long ago, even in youth, is the proof which is often cited by the witnesses as to the validity of the testament, and often regarded by them as proof of normal mentality. In this stage there are quite often immoral actions (stealing), also in regard to offenses against decency.

In the further course there is garrulousness, confabulation with considerable diminution of the intelligence, and lack of orientation in regard to time and space, fear if left alone, helpless if unaccompanied on the streets, neglect of social requirements in dress, in regard to eating and drinking, soiling the clothes and bedding through the imperfect closure of the sphincters.

Apoplectiform attacks in their turn make the mental condition worse.

The final stage is an apathetic idiocy, in which the old man finally becomes a child again.

With regard to the somatic disturbances, a senile dementia with or without focal symptoms must be distinguished. Senile dementia with focal symptoms shows hemiplegias, also paraplegias which owe their origin to apoplectic extravasations or thrombotic centers of softening.

### **Special Symptomatology.**

Illusions and hallucinations are frequent in the earlier stages of senile dementia, especially in the visual sense. Transitorily, there are massive hallucinations in all the senses, with considerable clouding of the consciousness. Such states appear especially at night.

The intelligence gradually crumbles away. There are often melancholic delusions, delusions of transgression, more frequently hypochondric, sometimes maniacal and hypo-maniacal states appear; finally, paranoid delusions with a persecutory and expansive content. In the last case grandiose ideas may be associated with these delusions.

There is often a rapid inversion of the actions by sudden impulses which are not opposed by inhibition. The violence of these last stand out in strong contrast to the former want of energy.

The disturbances of the memory have been discussed. The question here, especially at the beginning of senile dementia, is preferably of a diminution of the power of attention; hence the patients do not know that they have just eaten, that they have just made a visit, or what they have just been doing.

### **Somatic Symptoms.**

The furrowed brow, the wrinkled face, the stooped frame, the shuffling gait, trembling of the head, of the tongue, of the hands, and in the later stage the paralyses of the extremities, are all common concomitant symptoms of senile dementia. With this there is marked contraction and inequality of the pupils,

seldom reflex rigidity of the same (Siemerling and Moeli), prompt tendon reflexes which decrease in power later, and diminution of the skin reflexes. In the more advanced stages paralysis of the bladder and rectal reflexes develops. Moreover, there are present the ordinary changes of old age, especially in the organs of sense and in the vascular system.

The incipient agrypnia gives place later to long and lasting sleep. Narcoleptic attacks are often observed, the patients sleep during the day without reference to time or place, while on the other hand they are sleepless at night.

As in paresis, paralytic attacks also appear here.

*Etiology.*—Senile dementia does not begin as a rule before the sixty-fifth year, in women generally somewhat later. The premature appearance of the changes in the brain due to old age, and the immoderate development of the same, which senile dementia conditions, may be called forth before the age of sixty-five by heredity, by severe bodily disease, by abuse of spirits, by psychic causes (sorrow, care, loss of wife or husband).

The *course* of senile dementia is sometimes protracted, lasting ten years and even longer, often showing remissions and exacerbations. The result is death, which may come suddenly in an apoplectiform attack, or gradually by marasmus. Sometimes death by suicide occurs, especially in the first stage of senile dementia. An intercurrent disease often hastens the end (pneumonia).

### **Pathological Anatomy.**

The characteristic change of senile dementia consists of a general sclerosis of the arteries of the brain, often with hyalin fibrous degeneration. Sometimes the great vessels are intact while the small vessels and capillaries are diseased. There is an attenuation of the bones of the cranium, the diploe is visible (*malum senile*), generally external and internal pachymeningitis are present, quite often with hematmata, clouding of the arachnoid inlaid with calcareous plaques, large Pacchionian granulations, atrophy of the brain cortex, especially of the frontal lobes, and granulations of the ependyma. In a third of all cases there is hemorrhagic or thrombotic softening of the brain; further, sclerotic changes in the spinal cord. Microscopically, the

atrophic brain shows hypertrophy of the neuroglia, sometimes with miliary sclerosis of the cerebral cortex, disappearance of the tangential fibers, decrease of the number of the nerve cells of which those present are atropho-pigmentous, and fatty degeneration with chromatolysis. The smallest vessels and capillaries often seem destroyed, sometimes changed into strings without lumen. The peripheral nerves often show signs of a degenerative neuritis.

The *diagnosis* must take into consideration the fact that not every psychosis which appears in old age is senile idiocy. All other forms of psychic disease, even curable ones, may appear in old age. The slow development, the peculiar disturbances of memory, as well as the progressively increasing psychic weakness, are decisive diagnostic features.

Senile dementia is distinguished from the focal diseases of the brain by the absence of focal symptoms, or where such are present, by the course, especially when the late appearance of focal symptoms developed after the psychic disturbance was plainly manifest.

The *prognosis* is unfavorable.

The *treatment* should be symptomatic. The usual stimulants should not be cut off; coffee, beer, wine should be allowed moderately. For sedation, morphine injections may be used, or opium internally, and camphor injections to overcome initial states of weakness.

The restlessness of the patients and their inclination to immoral actions, the lack of superintendence and nursing at home with the poorer population, will give the indications for taking the sufferers from senile dementia to an institution.

### (c) Arteriosclerotic Psychoses.<sup>1</sup>

On the basis of a rapidly developing sclerosis of the arterial system, especially in men of from fifty-five to sixty years of age with palpitation of the heart, accelerated or intermitting pulse, with small albuminuric contents of the urine, the type of simple melancholia, with attacks of anxiety, self-reproaches, and thoughts of suicide, arises which will again pass away in the

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<sup>1</sup> Alzheimer. Sammelreferat. Monatsschrift für Psychiatrie, 1898.



course of a few months. During this time the alterations in the vascular system, which were not observed before, are apt to manifest themselves plainly (climacteric of men). In other cases the arteriosclerosis leads to brain atrophy only, either under the type of *senile dementia* where only the relatively youthful age (fifty-five to sixty years) is striking (*premature senescence*), or under the type of the demented form of paresis. From this it is distinguished by its later appearance, the lack of the reflex rigidity of the pupils, of the paralytic disturbance of speech, the development to a high degree of the arteriosclerotic phenomena in the full, bounding arteries, in the heart, the kidneys (arteriosclerotic atrophied kidney), the moderate degree of weak-mindedness with much disturbed memory and a strong feeling of disease with the absence of clearly defined delusions, and the very slow, unprogressive course.

The treatment of these states consists in combating the arteriosclerosis.

In the course of *paralysis agitans* melancholic conditions are often observed; after they have remained for a long time the symptoms of senile dementia often appear. *Acute encephalitis hemorrhagica* sometimes runs under the clinical type of *deli-rium acutum*.

### **Pachymeningitic Psychoses.**

Pachymeningitis, with or without hematoma, may accompany the various forms of brain disease.

Where it is the essential anatomical basis of the psychosis, the disease runs, after beginning with severe headaches, with profound depression, weakness of the memory and the intelligence, sometimes a very slow course and remains stationary for years; in other cases more rapidly, with vomiting and intercurrent paralytic states, ending in death. Such cases appear in alcoholists, after trauma, in tuberculous and cachectic individuals.

### **(d) Syphilitic Psychoses.<sup>1</sup>**

Syphilis as an etiological factor has already been considered.

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<sup>1</sup> Jolly. *Klinische Wochenschrift* 1, 1901.

*Organic* syphilitic psychoses may be conditioned:

1. By syphilitic disease of the cerebral arteries (endarteritis, periarteritis, periarteritis with following thrombosis and foci of softening).

2. By gummatous tumors of the brain.

3. By diffuse, often multiple, syphilitic disease of the brain and its envelopes (meningoencephalitis gummosa, syphilitic local meningitis diffusing itself from the trigonum intercrurale). In many cases the various types are present in combination.

A preliminary stage with headaches, disturbed sleep, paralyses of the muscles of the eye, transitory paralyses of the extremities, partial disturbances of the vision are common to the respective diseases.

In its further course the clinical type is very different, quite often changing in respect to the somatic symptoms, on account of the various localizations and the diffusion of the pathological process. Apoplectic and apoplectiform attacks, especially with right hemiplegia and aphasia (endoarteritis art. foss. Sylvii sinistr.), Jacksonian epilepsy, epileptoid states with intoxication-like confusion and hallucinations, and epileptic seizures are quite common. The disturbances of speech have usually the character of dysphasias and dysarthrias, not of syllable-stumbling. With reference to the psychic condition, a diminution of the intelligence and of the memory is common to the organic psychoses conditioned by syphilis. Herewith may be associated states similar to the symptoms of a delirium hallucinatorium, a hypochondric melancholia, and changes of maniacal excitement and depression; in rarer cases a paranoic mania may arise. In a great number of cases the disease runs under the type of progressive dementia (pseudoparesis syphilitica, Fournier).

For the differential diagnosis, see Paresis.

In many cases, especially after anti-syphilitic treatment, the disease remains stationary; there remains, however, a state of mediocre psychic weakness and a lack of bodily energy.

Sometimes the *outbreak* of a syphilitic psychosis suddenly follows an apoplectic attack or epileptic seizure.

The *course* and *duration* of the psychosis are determined by the localization and diffusion of the syphilitic process.

The *prognosis* is always doubtful, since the effect of the

specific treatment cannot always be estimated with absolute certainty.

The *treatment* is that for syphilis, where long-continued dosage of the specific remedy is to be preferred to those which are too energetic (unguent. ciner. in doses of 3 grams per day to a total quantity of 150 grams). If mercury is without effect, the iodide of potassium treatment should be tried in large doses (1.5 to 4.0 grams twice a day) or iodipin (a teaspoonful three times daily). Sometimes treatment with Zittmann's decoction is effective in obstinate cases. Cold-water cures are to be recommended in the after-treatment.

Through hereditary syphilis there may arise:

1. States of imbecility and idiocy.

2. Paresis in children.

3. Familiar progressive dementia (Homén), beginning at the age of twelve to twenty years, with a feeling of exhaustion, headaches, dizziness, later ataxia, trembling, contractures, slowness of speech, diminution of the intelligence and of memory.

In all these cases the inunction cure is strongly recommended.

## 2. Psychoses Which Are Called Forth by Focal Diseases of the Brain.

### (a) Psychoses After Apoplectic Attacks.

Brain apoplexies often evoke, with considerable weakening of the intelligence and of memory, a great irritability, weeping disposition; then, again, loquacity, easy susceptibility, unconquerable obstinacy in individual matters. Sometimes the abnormal disposition expresses itself especially in sexual perversions (indecent attempts). Melancholic or melancholio-hypochondric depression, paranoic delusions often develop on this basis. Repeated apoplectic attacks, especially in consequence of embolism and thrombosis with softening processes following, quite often lead, in regard to psychic phenomena, to a pathological type which is similar to senile dementia, while it shows somatically the symptoms of focal disease (aphasia, hemiplegia, hemian-

opsia). A state of aphasic confusion may arise transitorily both after the hemorrhagic and after the thrombotic or embolic form of apoplexy (obscurity of the consciousness with defects of memory and paraphasic disturbance of the speech).

**(b) Psychoses Which Are Produced by Brain Tumors.<sup>1</sup>**

To be considered are gliomata, sarcomata, carcinomata, fibromata, cholesteatomata, and tubercles of the brain.

Besides the physical symptoms, choked disc, headaches, dizziness, nausea and vomiting, abnormal psychic states develop, characterized by:

1. Hallucinations, appearing at different times and quickly disappearing, sometimes connected with the localization of the tumor (visual hallucinations in tumors of the occipital lobe), and are often recognized as deceptions.

2. The diminution of intelligence and of memory, often expressed as a certain laziness, indolence, and forgetfulness, a certain stupidity with a peculiar blank expression of the countenance. Sometimes a silly, foolish state, moria, appears.

3. A certain yielding disposition, facile irritability, laughing, weeping.

Perfected clinical types with massive hallucinations, with melancholic or paranoic delusions, epileptoid twilight states are rare; oftener there is progressive dementia, especially when there are multiple foci.

As a rule, the psychic disturbances of brain tumors are distinguished by being generally connected with considerable feeling of disease and by the appearance of more or less clearness in the intervals between the attacks, where delusions and sense deceptions are abundantly produced.

States of psychic alteration, similar to those produced by the above-described tumors, may be brought on by cysticercus, echinococcus (here epileptic seizures are especially frequent; one should examine for cysticercus of the skin and the eye), brain abscess (here especially hallucinatory deliria) and multiple sclerosis.

A local diagnosis cannot be made from the psychic disease

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<sup>1</sup>Kaplan. *Neurologisches Centralblatt*, 1897. Gianelli, the same.

unless it may be said in general that focal diseases of the frontal lobes very frequently call forth psychic alterations.

The local diagnosis must be made from the somatic symptoms only.

It may be observed, moreover, that psychic diseases may also be complicated with brain tumors.

### **Supplement.**

#### **Psychoses Which Result from Traumata.<sup>1</sup>**

Traumata may call forth mental diseases:

1. When they injure the development of the brain. Thus imbecility and idiocy may arise from traumata which affect the head in the uterus or at birth, or in childhood.

2. By bringing on a pathological condition in the developed brain. It is not necessary that there should be an essential change in the external envelopes, nor a breach in the tabula vitrea, a fracture of the base of the cranium, hemorrhage in the brain or its membranes. The signs of cerebral shock (coma, dilated pupils, retarded pulse, and lowered respiration) may be wanting immediately after the trauma, but, as a rule, they are present in those cases where a psychosis later on develops.

3. Without or with inconsiderable wounds of the head or the body, the suddenness, violence of the circumstances accompanying the wound (explosions, railroad accidents, and the like) may call forth a molecular change of the brain which may lead to a psychosis (terror psychosis, Kraepelin), (railway-brain). The connecting link between trauma and psychosis is found in the shock which is attendant upon the accident.

We distinguish a torpid stage (wan, pale countenance, pupils reacting sluggishly, pulse hardly perceptible and irregular, sinking of the temperature to 97° to 96° F., cold perspiration, the patient complains of cold and a sense of fainting, the consciousness is not obscured) from the stage of erethism, which generally follows (groaning and screaming, anxiety, running around, acceleration of the pulse and respiration).

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<sup>1</sup> Guder. Jena, 1886. Moeli. *Archiv für Psychiatrie*, vol. xii. Wille. *Archiv für Psychiatrie*, vol. viii. Troeger. *Friedreich's Blätter für gerichtliche Medicin*, 191.

Either of these stages may also appear isolated.

During the time of the trauma and for a shorter or longer period after it, complete amnesia may exist. In other cases this amnesia is only partial, is limited to details; in still other cases the amnesia affects also the occurrences preceding the accident for hours, even days and weeks (retrograde amnesia).

The developing psychosis can be recognized at once by the manifest psychic phenomena following immediately after trauma to the head, also in those cases of shock without external violence (*primary traumatic psychosis*), or only after long inconsiderable prodromal phenomena, months or even after a year and a day (*secondary traumatic psychosis*).

In the first case symptoms of a twilight state are sometimes connected with the trauma; in many cases this state recurs periodically. The symptoms of a delirium hallucinatorium, or of an anxious melancholia, or of an acute dementia often appear—psychoses which generally terminate in recovery. Sometimes, however, the above psychoses appear in the form of periodical mental disturbances. In a great number of cases a hypochondric or hysterical psychosis is connected with the trauma, the former with headache, pulsating and throbbing in the head, great sensibility to light and noise, insomnia and vertigo, feeling of anxiety with the most diverse phobias, hopelessness, with thoughts bent on suicide, but, above all, complete absence of energy and spirit. With this is generally found an accelerated pulse, atheroma of the vascular walls develops, skin and tendon reflexes are exaggerated, the tongue, hands, quite often the eyelids, twitch, sometimes even there is a trembling of the whole body. There is dermatography at times, and progressive diminution of the weight of the body, which cannot be prevented by the taking of abundant nourishment. There is often intolerance for alcoholic beverages. The development of a hysterical psychosis takes place with all the changing phenomena as they appear in psychoses arising on the basis of hysteria.

Quite often there is a combination of hypochondric and hysterical phenomena which have been especially frequent since the advent of legal actions, based on personal injuries, and generally are of very long duration and very difficult to cure.

In alcoholists, delirium tremens sometimes appears after the

accident, but the development of other alcoholic psychoses may be furthered by the trauma.

Where there is a long interval between the trauma and the first evident sign of the psychosis, it is quite often filled by constant headaches, great irritability, sluggishness and aversion to labor, inclination for tramping, overindulgence in alcohol, which is, as a rule, not kindly tolerated. Sometimes such states pass into incurable dementia.

With a similar course and with intercalary maniacal or melancholic phases, general motor paresis, *dementia paralytica traumatica* (Koeppen), develops.

Finally, paresis may be generated by the trauma when a predisposition is present (syphilis, alcohol, excesses, heredity).

While epilepsy and epileptic psychoses quite often arise in children in consequence of trauma, this disease appears in adults only exceptionally, after the thirtieth year.

In the cases which are reported as belonging to traumatic epilepsy, there is not, as a rule, a classical epilepsy, but an alcoholic or syphilitic type, in which the trauma is only an auxiliary factor for the development of the disease, or an organically conditioned epilepsy (Jackson).

Often, on the other hand, one sees epileptoid twilight states appear periodically after the trauma.

Apoplexies, encephalitis hemorrhagica, brain abscesses, and brain tumors may be caused by trauma, and the last may also condition psychoses proceeding from those diseases.

4. The trauma may produce a psychosis in this way, that the injury proceeding from it, or the scar conditioned by its healing, may bring on the disease by *reflex* irritation, usually with epileptiform phenomena (reflex psychosis), a most unusual occurrence.

5. The trauma may create the predisposition for the generation of a psychosis, in that it diminishes the power of resistance of the brain.

In this manner the psychoses, which sometimes first appear many years after the trauma, should be judged, in which during the interval no noteworthy pathological symptoms are present, and the immediate occasion for the mental disease must be

sought, *not* in the trauma, but in the etiological factors active later on.

6. Finally, a trauma may call forth a psychosis by confinement in bed, by the continual pains which it occasions, by the insomnia, the loss of strength, and, with the laboring population, the worry for their families and themselves, especially when coupled with a faulty existing heredity (consanguinity, alcoholism, syphilis).

The course, duration, and results of the psychosis called forth by a trauma follow the clinical type which it portrays.

*Diagnosis.* The confirmation that an existing psychosis has been conditioned by a trauma must have for a working basis:

1. That the trauma was of some consequence. It is of special importance to ascertain whether the trauma which was received was sufficient to produce a concussion of the brain, or only a psychical shock.

2. That nervous phenomena developed contemporaneously with the injury. This proof is somewhat difficult at times, since the insignificance of the phenomena does not allow them to be clearly recognized at once, perhaps not at all.

Often the trauma is only a circumstance which lights up a latent condition, or accelerates the course of a disease which has been imperfectly present for some time (paranoiacs consider an accident which affects them as brought forth by inimical powers which persecute them; they become confirmed in this belief of the existence of such powers, and then show their delusions plainly). Trauma quite often lights up a latent or slowly developing paresis and thereby hastens its course.

Finally, trauma is quite often the sequel of a disease of the nervous system (attacks of vertigo, carelessness of paretics, dizziness and falls of epileptics).

The *treatment* must look to surgery, where there are scars of the skin or depressions or fractures of the skull, brain abscesses, brain tumors; for the rest, the special type of the disease must be treated accordingly.

To the traumatic psychoses also belong those disturbances called forth by sunstroke and heat stroke<sup>1</sup> under the type of rav-

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<sup>1</sup> Régis. *Revue neurologique*, 1901.



ing excitement with hallucinations and considerable clouding of the consciousness; these often begin with spasms and dilated reactionless pupils, may end in recovery with retrograde amnesia, but sometimes terminate in chronic dementia and death.

Finally, here belong also those psychoses which have been called forth by *operations* and which are not to be considered with the intoxication psychoses generated by medicated bandages, like the iodoform psychoses for instance.

They affect predisposed individuals, whether the predisposition is from hereditary taint, or whether they are from the disease which has made the operation necessary, or from the manner of living (alcohol), or from remedies (morphine, chloral), or, finally, from chagrin, sorrow, or care.

Operations on the bladder, castration, making an anus preternaturalis, operations for cataract, appear to be the procedures especially favorable for generating psychoses which run under the type of delirium hallucinatorium<sup>1</sup> and in the majority of cases break out on the second to fifth day after the operation.

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<sup>1</sup> Picqué. Délire psychique post-opératoire. *Annal. méd. psychologiques*, July-August and Sept.-Oct., 1898.

## SUPPLEMENT.

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### **A. GUIDE FOR THE EXAMINATION OF ONE MENTALLY DISEASED AND FOR THE PREPARATION OF THE CLINICAL HISTORY.**

**I. The patient gives the answers, which must be finally corrected or completed by the statements of witnesses or relatives.**

**1. Name?**

When born?

Occupation?

Single?

Married?

Children?

Their age?

**2. Life history:**

Where and with what results did you attend school?

Up to what age?

Special talent?

Description of beginning and further course of occupation and the results?

Its change?

Have you been a soldier?

Did you suffer any disciplinary punishment?

(The last questions are often important, because the answers may give some knowledge of the somatic and mental conditions then existing).

(For women).

Appearance of the first menstruation? Further course, difficulties attending it?

When married?

Pregnancies and parturitions?

Nursed your children yourself?

3. Hereditary basis :
  - (a) Father or mother *mentally diseased or had nervous disease* (epilepsy, migraine) ?  
Of what did they die (apoplexy) ?  
Were they blood relations ?
  - (b) Grandparents ?
  - (c) Other blood relations ?  
Children ?
  - (d) Has there been drunkenness or suicide in the family ?
  - (e) Are certain diseases dominant in the family (tuberculosis, diabetes, cancer) ?
4. What diseases have you had ?  
Normal or instrumental birth ?  
Inhibitions of development (when did you learn to speak, to walk) ?  
Diseases of childhood ?  
Syphilis ? Its course ?  
Injuries to the head ?  
Accidents in general ?
5. Nervous diseases from which you have suffered ?  
Chorea ?  
Pavor nocturnus ?  
Convulsions ?  
Epileptic seizures ? Their course ?  
Wetting the bed ?  
States of unconsciousness ?  
Hysterical symptoms ?  
Migraine ?
6. Earlier mental disease ?  
When ? Its beginning, course, duration and result ?  
Institution treatment ?
7. Conflicts with the police or the criminal courts ? Attempts at suicide ?
8. Habits ?  
Excesses in Baccho, venere and tobacco ?  
Reaction to alcohol ?  
Onanism ?  
Overexertion, bodily or mental ?

9. What cause is given for the present disease?
10. When did its first symptoms appear and what was its course?  
 Has the patient made attempts at suicide?  
 Has he committed punishable actions?  
 Has he endangered himself or his family by abnormal actions (wasting money, excesses)?  
 Of what does the patient now complain?  
 (a) psychically,  
 (b) somatically?  
 Fevers? Epileptic seizures or hysteric attacks? Appetite, bowels, sleep?  
 Menstruation?
11. Status presens.

#### (a) Examination of the Mental Condition.

From the preceding examination a point of support will often be found as to the presence and direction of delusions. In this case one should make use of the remarks of the patient and connect with them more exact information.

This confirmation should be especially directed to ascertaining whether there exist:—

1. *Expansive delusions* (over-estimation of himself, megalomania).

2. *Depressive delusions* of a melancholic nature (delusion of attention, self-accusation, the delusion of transgression), of a hypochondric nature (complaints of sickness, alteration of the organs, the disease being a punishment for a bad life, for sins committed).

3. *Paranoic ideas of persecution* (the patient is the innocent victim of his enemies, a conspiracy exists against him).

4. *Combined delusions* (delusion of persecution and megalomaniacal ideas).

5. *Systematized delusions* (all the various delusions are brought into a determined system).

If in the preceding remarks of the patient there is no point of support for an examination on the delusions present, and if it is not clearly ascertained whether he is completely oriented or

not, his mental condition should be investigated after the following form :

- (a) Is the patient oriented?
- (b) What is his conception regarding his personality?
- (c) What has he observed in regard to his mental and physical condition?
- (d) What remarks does he make about the external world?

Questions to (a) :—

- Where are you?
- Who am I (the examiner)?
- For what reason are you here?
- How long have you been here?
- What date have we?

(It will appear from the answers to these questions whether the patient is oriented or disoriented).

Questions to (b) :—

- Your present calling?
- How long have you been engaged in this?
- Do you wish to continue it?
- Do you wish to take up another?
- Do you have particular plans for the future?
- Have you now another preferred position?
- Are you well-to-do?
- How much property do you possess?
- Do you own houses, lands, horses?
- Are you particularly distinguished in any special line?

Or :

- Can you follow your occupation no longer?
- Have you not done your duty?
- Have you transgressed in any way?
- Have you committed a crime?
- Are you tired of life?

(The answers to (b) show whether the personality is changed to expansion or depression).

Questions to (c) :—

- Has your mind or body altered?
- (a) In a favorable sense?
- Is it easy for you to think?

Is your memory good?  
 Has your muscular power increased?  
 Have you grown heavier?  
 Has your sexual power increased?  
 Do you not suffer from previous physical troubles?  
 (b) In an unfavorable sense:—  
 Has your memory diminished?  
 Is any mental exertion difficult for you?  
 Are your bodily organs diseased? Which?  
 Do you feel as if they were dead?  
 Have you syphilis?  
 Are you impotent (hypochondric ideas)?

Questions to (d):—

How do your relatives and friends behave towards you?  
 Have you observed that people wish you well?  
 Have you many friends?  
 Any lady friends?  
 Have you observed that people pay special attention to you?  
 Have you noticed any peculiar occurrences on the street or advertisements in the journals which refer to yourself?  
 Do you consider yourself the victim of persecutions?  
 Who are the persecutors?  
 What interest do they have in injuring you?  
 Have you given them grounds for persecuting you?  
 Are they right in doing this?  
 Or are you innocent?  
 Have the persecutors any personal aims?  
 Do you wish to prevent them from attaining their object?

In single cases they should also be asked how the external world is changed and whether it really exists.

Whether the ideas expressed are to be regarded as delusions.

If delusions are present, it will be possible, as a rule, to induce the patient to speak of them. Sometimes this only succeeds by the help of the discovery of *hallucinations* present.

One should *not* ask, "Do you hear voices," "Do you see forms," for in such cases the patients are frequently re-

served, especially if they are repeatedly asked and it is said to them that the phenomena of which they complain do not exist.

One should proceed systematically, gradually.

Do you have roaring in the head? Noises in the ears? Do you sometimes hear noises here or without? At night? Are not the carpets of a peculiar color?

Is there not an offensive odor sometimes? Is your food sometimes salty, bitter, or sweet?

Thus one learns at once or with some trouble whether there exist

6. *Hallucinations or illusions of the vision.* Description of them:

Stable? Agitated? Shadowy? Shining? Unilateral? Bilateral with different contents?

Does the patient believe in their objective truth, is he doubtful or does he know that it is a deception?

7. *Hallucinations or illusions of audition.* Description of them:

One person? Men's, women's, children's voices? Aloud or whispering? Unilateral? Bilateral with different contents?

Audibility of his own thoughts?

In regard to his belief in their reality?

8. *Hallucinations or illusions of smell:* Repulsive? Agreeable?

9. *Hallucinations or illusions of taste:* Repulsive? (Rotten? Carrion-like? If the patient complains of prickling, prickling, on the tongue at eating, it should be referred to hallucinations of the gustatory sense). Agreeable?

10. *Cutaneous hallucinations or illusions:—*

Furring, formication, electricity?

11. *Hallucinations of the temperature sense:—*

Having a hot or cold sponge passed over the body?

12. *Hallucinations of the muscular sense:—*

(a) In the visual apparatus? (The hallucinated sees the objects small or large, approaching or retreating.

(b) In the vocal apparatus?

Internal speech?

13. *Kinesthetic hallucinations:*

Does the patient think himself moved as a whole, in single members? Does he feel swaying? Floating, sinking, or rising in air?

14. *Hallucinations of the cœnesthetic sense:*

Does he feel his body, his heart, or other organs altered? In what condition is his sexual apparatus?

One should never be satisfied with confirming hallucinations in one or another sense, but should examine all the senses according to the previous form.

If one has ascertained sense deceptions, he should ask the patient how he thinks the conspicuous phenomena occur, since they contradict the reality and established physical laws.

If he says that they are called forth by a strange power, by enemies, one should ask what interest they have in treating him thus.

This examination is connected with the discussion of the justification by the patient of the delusions previously established.

From the answers of the patient previously given there will now be points of departure for the judgment of the power of reproduction and the power of associations (intelligence).

The more exact proof follows in the manner to be spoken of:

15. *Power of reproduction. Memory:*

(a) Pathologically heightened (hypermnnesia)?

(b) Pathologically depressed?

The questions must often be very different, according to the social station of the patient and his education.

Questions from the multiplication table?

Name of the President? Of his predecessor? Of the Governor?

Continents? States of the Union?

Rivers? Months? How many days has each?

How many hours in a day? How many minutes in an hour?

How many ten-cent pieces have twenty dollars? How many one dollar?

When will Christmas come? Your birthday?

The events of the day?



Is your memory good for past events, poor for recent events?

Narratives of your youth?

Who visited you yesterday?

What happened to-day?

Do you have loss of memory for certain times?

One tests the *power of attention* by having him repeat a number or a sentence after a short time or immediately, or by showing him a picture and explaining it, then, shortly afterward, asking him what it means.

16. The test of the conditions of the associations must ascertain whether they are pathologically heightened or pathologically depressed.

The first is shown by the rapidity of the answers, by the quick transition from one to another.

The tests as to whether *mental weakness* exists must regard, above all, the education, the occupation, the social position of the patient. One should have him subtract, divide, compute interest. Why do people pay taxes? What does congress signify? The legislature? One should ask questions connected with the *occupation* of the patient (with merchants, the source of supply of their wares, the cost of replacing, how many pounds are there in a kilogram, how much is a meter?<sup>1</sup>)

With this must be ascertained whether the conception of the question is retarded, whether there is difficulty in understanding it and whether the answer is delayed from that cause.

17. Finally, one must see whether determined ideas dominate the thought, or whether this proceeds according to the different laws of association.

18. The momentary condition of the mind—the *frame of the mind*—must be noted. One must observe whether this changes often during the examination (see emotions), whether the patient shows *emotion* during the examination, especially whether he shows symptoms of

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<sup>1</sup> One should not immediately diagnose "mental weakness" because one or more answers are wrong, especially in calculating. Sometimes the normal persons who are present, his wife, son, make the same mistake.

*anxiety* in general or in a determined direction, especially if there is also hypochondric anxiety and precordial anxiety.

19. The fact, which is to be taken up in the clinical history, will appear from the examination, whether the patient is able to follow its course attentively, or if he concentrates his attention on certain delusions and sense-deceptions, or whether his capability of attention is weakened.

With the condition of the attention is connected the greater or less *susceptibility*.

### (b) Examination of the Speech.

Whether there are neologisms?

Whether there is bradyphrasia?

Whether there is logorrhœa?

Whether there is echo speech?

Whether there is agrammatism?

Whether there is verbigeration?

Whether there is perseveration?

Whether there is paraphrasia?

Whether there is dysarthritic disturbance of the speech (scanning, bulbar speech, stuttering, stammering)?

One should then have the patient read and write, and note the conclusions of this examination.

### (c) Examination of the Body.

1. *The general condition of nutrition:*

Condition of the muscles? Weight of the body?

2. *Expression of the countenance* (maniacal, depressive, indifferent, observing, simple).

Color of the face (pale, cyanotic, congested).

3. *Cranium:*

Description of form as far as it can be done by sight or touch (dolichocephalic, brachycephalic, microcephalic, hydrocephalic, plagiocephalic), and any signs of degeneration (ears, eyes, palate, lips, teeth).

For the measurement of the cranium see, 1. The cranium and the so-called physical stigmata of degeneration.

Scars on the scalp?

4. *Eye muscles*, especially the *pupils*: Equal? Contracted? Dilated? Reflex rigidity of the pupils?

Background of the eye? Eventual examination of the field of vision (epileptic, hysteric, alcoholic, organic diseases of the brain).

5. *Peripheral auditory apparatus*.

6. *Olfactorius. Trigemini. Facialis*:

Fibrillary twitchings of the face muscles, asymmetry of the face? Glossopharyngeus (laryngeal reflex)? Deglutition? *Accessorius* (paralysis of the vocal chords)? Hypoglossus (trembling of the tongue), fibrillary twitchings, tongue protruded straight or obliquely)?

7. *Upper and lower extremities*. The trunk.

Stature? Distortions? Signs of degeneration? Gait? Tension of the muscles? (Passive movements in the articulations. One must examine whether there is an equal tension of all the muscles, as in contractures, or if the tension is solely in the antagonists, which appears in the movements of muscles entering into activity (negativism, arbitrary tension); further, whether the members remain still in the position brought about passively).

Spontaneous movements? Stereotypes?

Choreic movements? Tics?

Pareses? Paralyzes? Tremors?

Muscular atrophy? Eventual electric examination?

Reflexes?

Tendon reflexes (patellar, tendon of Achilles, cubital).

Ankle clonus?

Cutaneous reflexes?

Babinski's reflex?

8. *Sensorial cutaneous nerves*?

Hyperesthesias? Anesthesias? Paresthesias?

Feeling of pain? Sense of temperature?

9. *Vasomotor and trophic nerves*?

Condition of the cutis (pale, blue). Hair. Saliva. Perspiration. Tears. Decubitus.

10. *Discharge of urine and feces:*  
Enuresis. Dysuria. Ischuria paradoxa. Constipation.  
Involuntary discharges.
11. *Organs of digestion.*  
Scars on the tongue? Other peculiarities?  
Stomach? Liver? Spleen?
12. *Organs of respiration:*  
Larynx? Lungs?
13. *Circulatory apparatus:*  
Heart? Pulse? Atheroma of the arterial system?  
(Radial pulse? Serpentine temporal arteries? Carotid arteries?) Number of pulse beats and their condition?
14. *Examination of the urine* (especially for albumin, indican, and sugar).
15. *Sexual apparatus:*  
Signs of degeneration?  
In women, eventually manual examination.

If there are positive abnormal actions, which finally determine the calling in of a consultant, or committing the patient to an institution, one should ask the patient, after the end of the examination, what he thinks of such actions, why he performed them, whether he denies them, or if he considers them justified. Accordingly his ethical, religious, and esthetic feelings will appear.

At the end one should explain to the patient that he is sick, that he will recover rapidly if he obeys implicitly all the orders of the physician.

The *diagnosis* forms the conclusion of the clinical history.

In many forms of disease a momentary diagnosis will be possible: High grade of idiotism, hebephrenia with following dementia præcox, myxedema, paresis (the patient comes into the room with a "good morning" pronounced paralytically, an idiotic expression of the countenance, and a spastic-paretic or atactic gait).

The beginner will reach a decision as to the form of the disease most surely by the way of differential diagnosis.

It may be decided from the anamnesia whether a mental pathological state existed from childhood up (idiotism). The

diagnosis will be confirmed by the existing mental weakness, hydrocephalus, microcephalus, paralyses.

If this is excluded there would be a mental disease acquired later; thus the first question would be whether an organically conditioned psychosis is present or not.

For the first, the presence of paralyses of the motility, reflex rigidity of the pupils, loss of the patellar reflexes, paralytic disturbance of speech would decide.

The next thing to investigate is whether there is paresis, senile dementia, syphilitic disease, focal diseases.

For the differential diagnosis, see Paresis.

If an organic psychosis is excluded, one should consider an intoxication psychosis. Here the anamnesia will be decisive; as to alcoholism, see delirium tremens, subacute alcoholic psychoses.

Epileptic and hysteric psychoses are at once identified by the epileptic seizures and hysteric attacks shown in the anamnesia, as well as by the epileptic seizures and hysteric attacks during the psychosis. If all these forms of psychic disturbance are excluded, the diagnosis is that of a functional psychosis.

That of delirium hallucinatorium is characterized by the great obscurity of the consciousness; that of mania, by the accelerated efflux of ideas; that of melancholia, by the depressed frame of mind and inhibition; that of paranoia, by the systematized delusions; and that of acute dementia, by the mental paralysis. The diagnosis of circular psychosis can be determined with certainty only by the course.

There may be difficulties with the diagnosis even here, if the functional psychosis has ended in a condition of dementia.

The anamnesia decides that and the type of terminal dementia, as it has been described.

In order to reach a diagnosis one should examine along a constant, essential symptom, and ask himself in what forms that symptom is characteristic, and by the exclusion of the rest come to the type of psychosis.

The patient shows, *e.g.*, permanent, prominent megalomania. Then the diagnosis is either: 1, paresis; 2, paranoia; 3, mania; 4, alcoholic, or, 5, epileptic psychosis; 6, maniacal stage of circular psychosis.

By means of the anamnesia and by regarding the pathological symptoms present, except megalomania, from the side of the psyche (*e.g.*, mental weakness) and the body (*e.g.*, paralytic phenomena), one may reach the true diagnosis.

## II. The Patient Talks, but His Statements Are Confused.

The anamnesia must then be gathered from witnesses or from the statements of relatives.

The manner in which the patient answers the questions must be noted in the examination.

It must be ascertained:

1. Whether delusions or hallucinations are shown by the confused speech, or whether the presence of hallucinations is possible from the movements or appearance of the patient.
2. The attempt should be made to guide and fix him in passing on some questions which essentially require only the power of reproduction. Whether the patient can be guided or not, is to be noted. Further,
3. Whether his speech shows any of the above-designated disturbances.
4. Whether his frame of mind is serene, depressed, or indifferent.

A careful physical examination should then be made.

The essential question here is to ascertain whether there is a hallucinatory, maniacal, or demented form of confusion.

A paraphasic confusion should also be considered. In regard to the special diagnosis, see confusion, attention.

## III. The Patient is in a Stuporous Condition.

One should describe exactly how the patient lies, stands, or sits, whether he is agitated, and whether these movements are impulsive or stereotyped actions.

Further, the reaction to external stimuli is to be tested, how he behaves when questions are asked, how he takes nourishment, whether there is *flexibilitas cerea*.

The somatic examination must be made carefully, the behavior of the motor apparatus (hypertonia, katatonía, hypo-

tonia), the reflexes (tendon, cutaneous, and visceral), and the sensibility must be tested.

For a guide to the special diagnosis, see stupor.

#### **IV. The Patient is Raving.**

Here, in the impossibility of examination, the maniacal actions and the behavior of the patient are to be described.

The expression of the countenance is to be observed, and the possibility of turning the attention of the patient for a short time.

For the description of the condition and the diagnosis, see raving.

#### **V. The Patient Does Not Speak, Although He is Not Stuporous.**

The examination is the same as with the stuporous.

The diagnosis must consider the disturbances of speech.

### **B. COMMITMENT OF A PATIENT TO AN INSTITUTION FOR THE INSANE.**

In the year 1889, the State of New York created a State supervision over the insane, and vested full authority in a commission known as the State commission in lunacy. The commission has adopted a uniform committal blank, to be used in all State and private institutions under their supervision. The State hospitals are located at Utica, Willard, Poughkeepsie, Middletown, Buffalo, Binghamton, Ogdensburg, Rochester, Kings Park, Brooklyn, Ward's Island, Central Islip, Gowanda, Matteawan, and Dannemora. Private institutions caring for the insane are scattered throughout the State, and are licensed by and under the supervision of the State commission.

For convenience of reference sections 60, 61, 62, 63, and 64 of article 3 of the insanity law, constituting chapter 28 of the general laws, as enacted by chapter 545 of the laws of 1896, being the principal sections relating to the commitment of the insane, are here inserted :

SECTION 60. *Order for commitment of an insane person.*—A person alleged to be insane and who is not in confinement on a criminal charge, may be committed to and confined in an institution for the custody and treatment of the insane, upon an order made by a judge of a court of record of the city or county, or a justice of the supreme court of the judicial district, in which the alleged insane person resides or may be, adjudging such person to be insane, upon a certificate of lunacy made by two qualified medical examiners in lunacy, accompanied by a verified petition therefor, or upon such certificate and petition, and after a hearing to determine such question, as provided in this article. The commission shall prescribe and furnish blanks for such certificates and petitions, which shall be made only upon such blanks. An insane person shall be committed only to a State hospital, a duly licensed institution for the insane, or the Matteawan State Hospital, or to the care and custody of a relative or committee, as hereinafter provided. No idiot shall be committed to or confined in a State hospital. But any epileptic or feeble-minded person becoming insane may be committed as an insane person to a State hospital for custody and treatment therein.

SEC. 61. *Medical examiners in lunacy; certificates of lunacy.*—The certificate of lunacy must show that such person is insane and must be made by two reputable physicians, graduates of an incorporated medical college, who have been in the actual practice of their profession at least three years, and have filed with the commission a certified copy of the certificate of a judge of a court of record, showing such qualifications in accordance with forms prescribed by the commission.

Such physicians shall jointly make a final examination of the person alleged to be insane within ten days next before the granting of the order. The date of the certificate of lunacy shall be the date of such joint examination. Such certificate of lunacy shall be in the form prescribed by the commission, and shall contain the facts and circumstances upon which the judgment of the physicians is based and show that the condition of the person examined is such as to require care and treatment in an institution for the care, custody and treatment of the insane.

Neither of such physicians shall be a relative of the persons applying for the order or of the person alleged to be insane, or a manager, superintendent, proprietor, officer, stockholder, or have any pecuniary interest, directly or indirectly, or be an attending physician in the institution to which it is proposed to commit such person.

SEC. 62. *Proceedings to determine the question of insanity.*—Any person with whom an alleged insane person may reside or at whose house he may be, or the father or mother, husband or wife, brother or sister, or the child of any such person, and any overseer of the poor of the town, and superintendent of the poor of the county in which any such person may be, may apply for such order, by presenting a verified petition containing a statement of the facts upon which the allegation of insanity is based, and because of which the application for the order is made. Such



petition shall be accompanied by the certificate of lunacy of the medical examiners, as prescribed in the preceding section. Notice of such application shall be served personally, at least one day before making such application, upon the person alleged to be insane, and if made by an overseer or superintendent of the poor, also upon the husband or wife, father or mother or next of kin of such alleged insane person, if there be any such known to be residing within the county, and if not, upon the person with whom such alleged insane person may reside, or at whose house he may be. The judge to whom the application is to be made may dispense with such personal service, or may direct substituted service to be made upon some person to be designated by him. He shall state in a certificate to be attached to the petition his reason for dispensing with personal service of such notice, and if substituted service is directed, the name of the person to be served therewith.

The judge to whom such application is made may, if no demand is made for a hearing in behalf of the alleged insane person, proceed forthwith to determine the question of insanity, and if satisfied that the alleged insane person is insane, may immediately issue an order for the commitment of such person to an institution for the custody and treatment of the insane. If, however, it appears that such insane person is harmless and his relatives or a committee of his person are willing and able to properly care for him, at some place other than such institution, upon their written consent, the judge may order that he be placed in the care and custody of such relatives or such committee. Such judge may, in his discretion, require other proofs in addition to the petition and certificate of the medical examiners.

Upon the demand of any relative or near friend in behalf of such alleged insane person, the judge shall, or he may upon his own motion, issue an order directing the hearing of such application before him at a time not more than five days from the date of such order, which shall be served upon the parties interested in the application and upon such other persons as the judge, in his discretion, may name. Upon such day, or upon such other day to which the proceeding shall be regularly adjourned, he shall hear the testimony introduced by the parties and examine the alleged insane person if deemed advisable in or out of court and render a decision in writing as to such person's insanity. If it be determined that such person is insane, the judge shall forthwith issue his order committing him to an institution for the custody and treatment of the insane, or make such other order as is provided in this section. If such judge can not hear the application he may, in his order directing the hearing, name some referee, who shall hear the testimony and report the same forthwith, with his opinion thereon, to such judge, who shall, if satisfied with such report, render his decision accordingly. If the commitment be made to a State hospital, the order shall be accompanied by a written statement of the judge as to the financial condition of the insane person and of the persons legally liable for his maintenance as far as can be ascertained. The superintendent of such

State hospital shall be immediately notified of such commitment, and he shall, at once, make provisions for the transfer of such insane person to such hospital.

The petition of the applicant, the certificate in lunacy of the medical examiners, the order directing a further hearing as provided in this section, if one be issued, and the decision of the judge or referee and the order of commitment shall be presented at the time of the commitment to the superintendent or person in charge of the institution to which the insane person is committed, and verbatim copies shall be forwarded by such superintendent or person in charge and filed in the office of the State commission in lunacy. The relative, or committee to whose care and custody any insane person is committed, shall forthwith file the petition, certificate and order, in the office of the clerk of the county where such order is made, and transmit a certified copy of such papers, to the commission in lunacy, and procure and retain another such certified copy.

The superintendent or person in charge of any institution for the care and treatment of the insane may refuse to receive any person upon any such order, if the papers required to be presented shall not comply with the provisions of this section, or if in his judgment, such person is not insane within the meaning of this statute, or if received, such person may be discharged by the commission. No person shall be admitted to any such institution under such order after the expiration of five days from and inclusive of the date thereof. Notwithstanding the requirements of this section that an alleged insane person be duly committed by an order of the court, in a case where the condition of such person is such that it would be for his benefit to receive immediate care and treatment, or if he is dangerously insane so as to render it necessary for public safety that he be immediately confined, he shall be forthwith received by a State institution authorized by law to care for the insane. In such case such insane person shall be so received by such institution upon a certificate of lunacy, executed by two medical examiners in lunacy after the examination and in the manner provided in the preceding section, and upon a petition made by the person authorized by this section to apply to a court for an order of commitment. By virtue of such certificate of lunacy and such petition such insane person may be retained in such institution for a period not to exceed five days. Prior to the expiration of such time an order for his commitment must be obtained in the manner provided by this section. The certificate of lunacy executed by such physicians must contain adequate reasons why the insane person should be immediately received in an institution for the insane for treatment. The superintendent or person in charge of any such institution may refuse to receive such insane person upon such certificate and petition, if in his judgment the reasons stated in the certificate, or the condition of the patient, are not sufficient, or is not of such character, as to make it necessary that the patient should receive immediate treatment. (As amended by ch. 146, L. 1903.)

SEC. 63. *Appeal from order of commitment.*—If a person ordered to be committed, pursuant to this chapter, or any friend in his behalf, is dissatisfied with the final order of a judge or justice committing him he may, within ten days after the making of such order appeal therefrom to a justice of the supreme court other than the justice making the order, who shall cause a jury to be summoned as in case of proceedings for the appointment of a committee for an insane person, and shall try the question of such insanity in the same manner as in proceedings for the appointment of a committee. Before such appeal shall be heard, such person shall make a deposit or give a bond, to be approved by a justice of the supreme court, for the payment of the costs of the appeal, if the order of commitment is sustained. If the verdict of the jury be that such person is insane, the justice shall certify that fact and make an order of commitment as upon the original hearing. Such order shall be presented, at the time of the commitment of such insane person, to the superintendent or person in charge of the institution to which the insane person is committed and a copy thereof shall be forwarded to the commission by such superintendent or person in charge and filed in the office thereof. Proceedings under the order shall not be stayed pending an appeal therefrom, except upon an order of a justice of the supreme court, and made upon a notice and after a hearing, with provisions made therein for such temporary care or confinement of the alleged insane person as may be deemed necessary.

If a judge shall refuse to grant an application for an order of commitment of an insane person proved to be dangerous to himself or others, if at large, he shall state his reasons for such refusal in writing, and any person aggrieved thereby may appeal therefrom in the same manner and under like conditions as from an order of commitment.

SEC. 64. *Costs of commitment.*—The costs necessarily incurred in determining the question of the insanity of a poor or indigent person and in securing his admission into a State hospital, and the expense of providing proper clothing for such person, in accordance with the rules and regulations adopted by the commission, shall be a charge upon the town, city or county securing the commitment. Such costs shall include the fees allowed by the judge or justice ordering the commitment to the medical examiners. If the person sought to be committed is not a poor or indigent person, the costs of the proceedings to determine his insanity and to secure his commitment, as provided in this article, shall be a charge upon his estate, or shall be paid by the persons legally liable for his maintenance. If in such proceedings, the alleged insane person is determined not to be insane, the judge or justice may, in his discretion, charge the costs of the proceedings to the person making the application for an order of commitment, and judgment may be entered for the amount thereof and enforced by execution against such persons.

The following blank should be filled out only by two medical examiners qualified according to section 60:—

### Certificate of Lunacy

STATE OF NEW YORK, }  
 County of..... } ss:  
 City, Town or Village..... }

#### Statement of Facts.

1. Patient resides at....., county of.....; age.....years; nativity (*if foreign, how long in U. S.*).....; sex.....; color.....; occupation.....; single, married, widowed, divorced. (*Strike out words not required.*)

2. Birthplace of father.....; of mother.....

3. Number of previous attacks....; present attack began.....190  
*(If the patient has ever been an inmate of an institution for the insane, state when and where, and whether discharged recovered or otherwise.)*

4. Was the present attack gradual or rapid in its onset?.....

5. What is the patient's general physical condition?.....  
*(If afflicted with any infirmity or disease other than insanity, state it.)*..

6. Is the patient cleanly or uncleanly in personal habits?.....

7. Is the patient violent, dangerous, destructive, excited or depressed, homicidal or suicidal?.....  
*(If either homicide or suicide has been attempted or threatened, it should be so stated.)*.....

8. What is the supposed cause of the insanity? (*State both predisposing and exciting causes, if known.*).....

9. Has the patient insane relatives? If so, state the degree of consanguinity, and whether paternal or maternal.....

10. State the patient's habits as to the use of liquor, tobacco, opium or other drug, and whether excessive or moderate.....

We, ....., a legal resident of ....., county of ....., State of New York, and ....., a legal resident of ....., county of ....., and State aforesaid, being severally and duly sworn, do severally certify and each for himself certifies, with the exceptions which are hereinafter noted, as follows:

1. I am a graduate of an incorporated medical college, and a qualified medical examiner in lunacy; a certificate of my qualifications as such

examiner, or certified copy thereof, is on file in the office of the State Commission in Lunacy, and I have received from its secretary an acknowledgment of the receipt of the same.

2. I have with care and diligence personally observed and examined on the date of this certificate, namely, on the.....day of....., 190 ,  
....., now residing or being at.....  
in the county of....., and as a result of such joint examination find, and hereby certify to the fact, that he is insane and a proper subject for custody and treatment in some institution for the insane, as an insane person under the provisions of the statute.

3. I have formed the above opinion upon the subjoined facts:

a. Facts indicating insanity personally observed by me, as follows:

The patient said (*State what the patient said, if anything, in presence of the examiners*):.....  
.....  
.....  
.....

The patient (*State what the patient did in presence of the examiners and also describe his or her appearance and manner*):.....  
.....  
.....  
.....

b. Other facts indicating insanity, including those communicated to me by others, as follows: (*State what, if any, significant change there has been in the patient's disposition, mental condition, business or social habits, or bodily health.*) .....  
.....  
.....  
.....

4. That the facts stated and information contained in this certificate are true to the best of my knowledge and belief.

....., M.D.

....., M.D.

Severally subscribed and sworn to before me this... }  
day of....., 190

The statutes of the different States and Territories of the United States vary materially in regard to the form of procedure necessary to commit a patient to an institution for the insane. These have been abstracted by Dr. Henry Putnam Stearns, and may be found in the appendix of his lectures on Mental Diseases.

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